



Reply to Dr. Wedelstaedt's Criticisms.

By DWIGHT M. CLAPP, D.M.D., Boston, Mass.

Having read carefully the article, "Some Mistakes Made by Dr. Clapp in the American Text-Book of Operative Dentistry," published in the September number of the *ITEMS OF INTEREST*, I am uncertain whether it will be better to reply to it at length, or to ask that the readers of the *ITEMS OF INTEREST* take this article and read it with the text of chapter XII. of the above mentioned work before them. I feel that the latter would be all the vindication I need, if, indeed, any vindication is called for from such a criticism. I have the feeling, however, that perhaps a reply may cause increased reading of this chapter on Combination Fillings by the dentists at large, and, consequently, it may assist a greater number of my professional brethren throughout the country who, like myself, are trying to prolong the usefulness of human teeth.

The editor of this journal has himself replied so fully and admirably to the criticism on use of terms that I need not add to it a word.

I may remark that nowhere in "Chapter XII." is there any assertion that every cavity must be filled according to the methods therein set forth. Sufficient reliance was placed on the intelligence of the readers of it to know when the methods described would be helpful.

My critic has, in several instances shown a most disdainful disregard of the text he assumes to criticize, and sets up his own ships of straw to show what a Dewey he is at knocking the stuffing out of them.

On page 644, line 40, he says: "It is a mistake to fill cavities that have 'neither pits nor undercuts,' etc., etc." A careful reading of the second paragraph on page 274 (*Text-Book*), will show that no cavity of this kind was mentioned *except to explain the peculiar qualities of certain kinds of gold*.

On page 642, line 15, he says: "It is a mistake to suggest that 'amalgam fillings in incisors need not be thicker than an ordinary visiting card,' " etc., etc. (The quotation marks are his.)

On page 261, line 5 (Text-Book), will be found this: "The amalgam need not be more in amount, at this point, than the thickness of an ordinary visiting card." Only a careless reader could have made such a misquotation.

My critic says (page 642, line 7): "It is a mistake to say 'amalgam preserves teeth better at the cervical (gingival) margin than gold.' It does not, never did, never will." I am content to allow the reader to take his choice. The conclusion that I have drawn from an examination of a very large number of fillings and expressed in chapter XII. that amalgam does preserve teeth better at gingival margins (not that it never fails) than gold, or the assertion of my critic that it does not.

Page 642, line 12, "It is a mistake to put amalgam in the 'six anterior teeth,' for the simple reason that other filling materials are better." I might be like the Admiral in the "Queen's Navee," and say, on this point, "What! Never? Well, hardly ever!" But if a man was practicing dentistry in a country district, and a vigorous farmer should come to him with his incisors decayed, I, for one, would not condemn that dentist if he should, *after careful consideration*, fill those teeth with amalgam, provided, of course, he did it in the manner recommended in "Chapter XII."

"It is a mistake to wind the silk ligature
Page 642, round and round the tooth and matrix, for
Line 21. the reason that one cannot make contour fillings that will be self-cleansing by that method.

The matrix cannot be forced far enough away from the tooth, so that the filling will not be flat at the middle third." I am quite willing to take my critic's word that he cannot make a *full contour* filling in this manner, but I must emphatically affirm that the writer can.

"It is a mistake ever to use soft cement for any
Page 642, other purpose than capping pulps. * * * It is
Line 32. also a mistake ever 'to fill at once' on any kind of cement." To my young readers, who

have used soft cement for other purposes than capping pulps, and who have filled over cement at once, I will say: Do not be alarmed at what you have done; hundreds of dentists have been doing this right along for more than twenty-five years, and have had most satisfactory results. But never do this, or anything else in dentistry, with your eyes shut and your reasoning powers asleep.

Page 642, “It is a mistake ‘to leave the matrix *in situ*
Line 38. until the amalgam has set,’ etc., etc.” My experi-
ence shows that oftentimes when the matrix has been
used for making an amalgam filling, restoring a con-
siderable portion of a crown, and when the bite is such that there is
danger of the filling being broken away before it is perfectly hard, all
danger of accident may be avoided by leaving the matrix in place until
the amalgam is fully set.

Page 643, “It is a mistake to say ‘Cement strengthens frail
Line 9. walls.’ This is simply impossible, for the reason
that cement in itself has no elements of elasticity. It
does not compare in any way with dentine; on the
contrary, it is just the reverse from it; a brittle substance. This being a
fact, how can it strengthen frail walls?” I will answer this question, in
Yankee fashion, by asking another: Why does a mason lay his brick in
cement? It is brittle and inelastic, and yet, it does strengthen the brick
wall.

Page 643, “It is a mistake to fill mesio-occlusal cavities in
Line 19. upper first molars with amalgam, if gold can be
used; for the reason that gold is, in the vast majority
of cases, the best filling material to be used.” Gold
may be all right in the “vast majority” of cases. It is in the small minority
of cases that we get great help by using *combination fillings*.

Now we come to the most extraordinary statement that I have ever
encountered in dental literature or text-book during more than twenty-
five years of reading. Page 643, line 24: “The making of an amalgam
filling involves much more labor than the making of a gold filling, and it
is a kind of labor not to be sneered at, for it must be careful and pains-
taking. It is much more trying on nerves and muscles than the labor
of making gold fillings, for the simple reason that in one case you know
what you are doing, and in the other you only think you do.” I can’t
help thinking that my critic is something like the man of whom the late
Josh Billings (a true sage and philosopher) said: “He knows too many
things that ain’t so.”

Page 643, “It is a mistake ‘to pack gold on soft amalgam,’
Line 36. for the reason that soft amalgam should never be
used for filling teeth.” Here my critic would
lead his readers to suppose that I had advo-
cated the use of “soft amalgam” for filling teeth. By referring
to the text-book we find that the mention of “soft amalgam”
comes under the heading, “Amalgam and gold fillings, the gold being

added while the amalgam is soft" (page 267, line 14). Thus it will be seen that the gold is to be added while the amalgam is soft—i. e., before it has commenced to set, or become hard. Nowhere in the chapter under criticism is it recommended that amalgam with an excess of mercury be used. I will refer my critic and my readers to Drs. Black and Crouse, the present experts on amalgam, for instructions how to mix and use amalgams.

Our writer tells how a gold veneer may be put on amalgam fillings. He will find this fully described in "Chapter XII."

Page 644,
Line 1.

"It is a mistake to say, 'Almost no tooth substance need be cut away *simply to get access*. This is wrong, for the reason that decay cannot be removed as it should be without a proper Convenience Form. Nor can any progressive dentist ignore the Marginal Form, to say nothing of the Retentive Form. To suggest the preparation of a cavity, on these lines, ignoring entirely the five forms for cavity preparation, viz: The Outline Form, the Resistance Form, the Retentive Form, the Convenience Form and the Marginal Form (Black) and all that has been said of and for "extension for prevention" by able writers of long ago, is wrong. Dr. Clapp and every intelligent man in the profession knows it. No such statement should be permitted in a text-book of dentistry in this last half of the last decade of the nineteenth century." Here my critic has found his great opportunity. He imagines that he is Dewey, Schley and Sampson all rolled into one, and that he has all the big caliber and rapid-fire guns of argument at his command. Let us again refer to the text he is bombarding. This is what we find: "Almost no tooth substance need be cut away *simply to get access* to the cavity, to properly start and pack the filling, as is often necessary if an entire gold filling is to be made. * * * Of course, the excavation must be planned so that a filling of proper contour can be made, and walls cut back, where by so doing future decay can be better guarded against." (Text-book, page 268, line 3.) Is there anything here suggesting the leaving of decay in cavities, or of omitting anything whatsoever that is calculated to make the work better? On the other hand, Dr. Wedelstaedt and every intelligent man in the profession knows that to perfectly pack gold it is *necessary*, sometimes, to sacrifice much valuable tooth substance, accompanied with pain to the patient and hard work for the operator, *simply to get access*.

I am accused of merely reiterating what Dr. Fernandez, of Chicago, alleged to be true years ago. I am glad of this opportunity of stating that with my manuscript of this chapter there was a disclaimer as to there being anything in it original—that it was but the compilation of

ideas received from reading, from odd bits of conversation, and from any and every source from which ideas could come. This, with other things, I should like to have said by way of explanation, was eliminated by the editor, in order to keep the volume as small as possible.

Page 644, "It is a mistake to advise the use of an oiled
Line 31. burnisher on cement fillings 'at just the right degree of hardness,' for this reason—as you burnish on one

side you draw away the cement from the opposite margin." I trust the Doctor will not become discouraged, and give up the use of the oiled burnisher, for I can assure him that with sufficient practice there is every reason to think that he will be able to accomplish what the rest of us are doing constantly.

Page 645. "It is a very great mistake to advocate the 'use
Line 13. of the matrix in making fillings of soft foil,' for this reason: All proximal fillings, when made with

gold, should be built some distance beyond the margins of the cavity, so that the filling can be properly condensed. There is a second reason, also, viz.—that the filling may be polished perfectly. * * * Years ago I used the matrix but discarded it. * * * If the matrix is placed around the tooth and tied (as illustrated on page 262), we shall have this result in the vast majority of cases—a poor contour that will be flat at the middle third. A filling of this kind is of no use in preserving the tooth. * * * Amalgam and the matrix are the best of friends. Do not separate them. They belong together." It is quite correct to say that all approximal fillings of soft gold should be built some distance beyond the margins, but, with a properly adjusted matrix, soft gold can be so solidly packed that the bulging of the matrix will give all the surplus that can be condensed laterally, making the edges flush and tight. This being the case, of what benefit would be a larger mass of gold that must be condensed and the surplus gotten rid of somehow, in order to give the filling a proper contour? The second reason that is given, "so that the filling may be polished perfectly," is, I confess, entirely beyond my comprehension. A properly made matrix filling is nearly perfect in shape when the packing instruments are laid aside for the finishing. I am altogether too obtuse to understand why a filling of this kind cannot be polished perfectly. If the right kind of contour can be obtained with the matrix for an amalgam filling, as our critic says it can be, why can it not be done with gold?

It gives me the greatest satisfaction to place against the assertion of my critic a very recent statement of a member of the profession, whose practical knowledge and ability as a tooth saver are so well known that

great weight must accompany it. Dr. Safford G. Perry, in an article that should be read carefully by every member of the profession, in the *International Dental Journal* for September, page 572, says: "In the early years of the matrix I was shy of it, fearing the making of bad margins, but since having the plugging instruments described my use of the matrix has increased."

"In a chapter devoted to combination fillings
 in this text-book, I think it was a grave mistake not
 to discuss combination fillings made partly of tin and
 finished with gold." Our critic is referred to the
 paragraphs "Gold and Tin" and "Tin-Gold," page 277, where he will find
 this subject at least mentioned.

"Men tell us it is easy to place cement into cavi-
 ties and then pack amalgam upon and into it. I have
 made some experimental fillings of this kind in the
 cavity block. The cavities were not filled three-
 quarters full of soft cement, but about one-quarter. After the first piece
 of the amalgam was crowded into the soft cement the margins were
 most carefully cleaned, all excess amalgam and cement was removed and
 the packing of amalgam proceeded with, as has been suggested in this
 chapter. These fillings have been examined by twenty or twenty-five
 dentists who have, without exception, pronounced them perfect. And
 they are so, as far as one can judge from appearances. But examine
 them with the one-inch power in the microscope and you have their true
 condition revealed. And what is it? Margins of cement. These fillings
 have been used to instruct those employing this method who have visited
 me. As each has seen the condition of these fillings, what verdict has
 been rendered? Only one—"That settles that method." We cannot use
 a microscope in the mouth to observe how we leave fillings made by
 this or any other method. Would that we could; we should learn much."
 This is a very grave charge, and if it can be substantiated, must certainly
 do away with this method of practice. I do not believe the charge can
 be proven. I have made a specimen filling by putting gold into soft ce-
 ment, considering that if a gold filling can be made this way an amalgam
 one certainly can. The mallet was used on the gold exactly five minutes
 after the cement touched the tooth. This filling I have forwarded to the
 editor of this journal, with the request that if he finds margins of cement
 he will make as public mention of it as possible. I will leave it to him
 to decide whether the filling sent is a desirable one to imitate.

"I hold firmly to one thing, and that is that
 anything that tends to lower the standard of dentistry
 is a grave mistake. I feel that 'combination fillings'
 as advocated in this chapter are a mistake. Such

teaching leads to lowering the standard." To maintain and elevate the standard of dentistry is a noble sentiment, and I indorse it most heartily; but I feel that it cannot be done by over-cultivating the manipulative possibilities of gold. That will surely tend to make too prominent the *jewelry* side of dentistry. The highest ideal of the dentist should be to preserve and restore teeth, and save their natural appearance. To do this he must be ready to make use of every means offered to accomplish his object, not forgetting that patients are not blocks of wood, but bundles of nerves, that must be catered to in every possible manner. It is the power to read the complex human system, and determine rightly what is the best method and what are the best materials to use in its restoration and preservation that marks the difference between the artisan and the professional man.

I have a notion—it may be old fashioned and behind the times—that when a dentist deliberately misquotes the writings of another, and sends broadcast over the land gross misrepresentations and perversions of his meaning, which he makes the butt of his criticism, he, in himself, lowers the standard of the personnel of the profession.

No one who tries to write for the benefit of the profession can truly say, "I am above error," and I welcome, for myself, all just and thoughtful criticism.

A Correct Bite in Articulating Teeth.

By DR. GUSTAVUS NORTH, Cedar Rapids, Iowa.

Articulating teeth is one of the important points in making artificial dentures.

In taking the bite the exact space between the superior and inferior maxilla must be obtained. If the bite should be a little close and the space increased after the models are attached to the articulator, the posterior teeth will be too long, and if the bite should be a little wide and the space decreased after attached to the articulator the anterior teeth will be too long.

The only way to articulate teeth is to obtain a correct bite and space, and to observe the natural position of the jaw, and make no change whatever in the position of the models after adjusted to the articulator, or your denture will be imperfect.

Grinding the masticating surfaces of the teeth to make proper articulation after the teeth are completed shows imperfect work.

Pyorrhea Alveolaris.

By W. A. ALLEN, D.D.S., Billings, Mont.

Fifteen years ago I began to collect articles relating to this trouble or disease. Could this mass of contradictions and misconstrued terms be placed before any intelligent practitioner, he would go insane. Dr. B. F. Arrington has kindly furnished the readers of *ITEMS OF INTEREST* another production of the would-be pyorrhea expert.

A little common sense would be useful here. If the gums are inflamed and pus exudes from the roots, we must conclude that there is something to cause this condition. Let us remove this cause first and thereby relieve the congested gums and start to repair the damage already done.

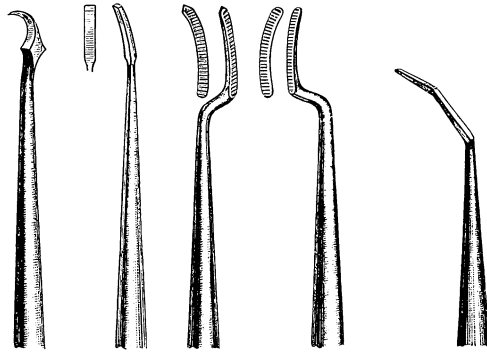
To remove this calcareous deposit instruments are required, not clubby chisels and hoes. I will wager that not ten per cent. of cases treated by ordinary methods will show perfectly cleaned roots below gum margins, and some cases I have examined were not cleaned above the gums. So long as our operations show such carelessness we cannot expect anything better. However, the operator cannot always be condemned, as I have never been able to find a set of instruments on the market that would reach the desired places or the diseased teeth affected by pyorrhea.

After searching the dental depots I began to make a set of instruments, by which I might be able to reach all parts, but not until I had worked two years did I get them adapted to the several teeth where disease commonly occurs.

I secured a skull with all the teeth—an Indian who was killed in the Pryor Mountain fight between the Crows and Siouxs, many years ago. I went to the blacksmith shop, took it along and forged five instruments, adapting each to the bony skull. I sent them afterwards as patterns and had them duplicated by an instrument maker, and I believe I have something that will prove useful.

With all the deposits removed, let us get all teeth in perfect occlusion, and retain them there by any of the several methods used, being careful not to cover the gum margins, as we must use medicine to start up new granulations and to reduce inflammation. Having got this far let us see if any teeth are elongated. If so, the closing of the jaws will irritate the peridental membrane and cause a continuance of the inflammation.

As every dentist has his pet germicides and mouth washes I will not suggest any, but will say that if the operations up to this point are carried on perfectly, and the teeth secured in position, the pyorrhea will vanish. Then it devolves on the patient to keep the mouth in proper condition of cleanliness. There is a cure, and if the ex-President of the Southern Dental Association will give one thousand dollars I will show him a score of cases which have been cured for five years, and several teeth carrying bridges which, at one time, could have been extracted by the thumb and fingers.



Let us go one step at a time and complete the first before we take the second; leave the clouded mysteries behind the screen and hold on to the practical, and strive to excel in each operation.

Roentgen Rays in Practice.

By C. EDWARD KELLS, D.D.S., New Orleans, La.

Case 1.

As time passes the absolute necessity for the Roentgen rays as an aid to diagnosis, becomes daily more apparent.

A typical case, wherein no satisfactory treatment could otherwise be decided upon, is shown in Fig. 1, which cast is taken from the mouth of a Miss of 14; an unusually well developed girl for her age. The left central is misshapen as shown, the enamel gone, but no decay. Whether or not the missing cuspid has been extracted is uncertain. Two methods of treatment present themselves, depending upon whether the cuspid can be found or not. If not, the left central should be moved over towards

the lateral and a central implanted in its proper place. If, however, the cuspid can be found, then it becomes necessary to move the left central and lateral over into their proper places in the arch, and thus procure space for the cuspid.



FIG. 1.

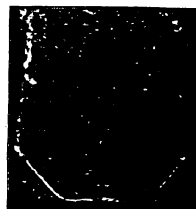


FIG. 2.

Which of these two courses to pursue, it would be impossible to decide upon, without the art of skiagraphy. In Fig. 2 is shown the skiagraph obtained, from which it is seen that the cuspid lies high up in the roof of the mouth, its cusp only being in line of the photographic film used. This is sufficient, however, to relieve our doubts and allow our future operations to be based upon scientific knowledge and not mere guesswork.



FIG. 3.



FIG. 4.

Case 2.

The extraction of partly erupted, encysted, or malposed third molars is very frequently a most difficult operation, and any means by which it may be facilitated should be adopted.

Upon the shape and number of the roots of such teeth depends the ease of removal, of course; and when such is known beforehand, one is better prepared for the work in hand.

The use of the Roentgen rays in such cases is most advantageous, as by their aid a picture of the root, disclosing whether it is straight or curved and its other characteristics can be obtained.

A case in recent practice illustrates this most beautifully. After its extraction, the tooth was imbedded in a plaster cast of the mouth in its former position, and the case is shown in Fig. 3. The skiagraph taken is shown in Fig. 4.

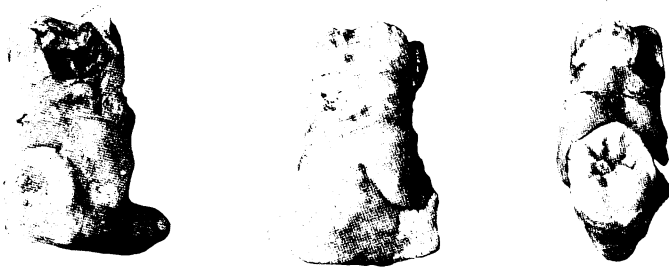
From this it was clearly shown that instead of the third molar being parallel with the second, it was almost at right angles to it, and furthermore it was seen that a forcep was not the proper instrument for its removal.

The tooth was readily extracted, a result I fear, that would not have been obtained without the skiagraph.

Concrescent Teeth.

By DR. WATKIN W. MORRIS, Lismore, New South Wales, Australia.

The accompanying illustrations show an abnormality from three different aspects.



This is an upper second molar, to the roots of which have become attached a wisdom tooth, the cementum of one being continuous with that of the other at the points of union, and upon extraction, it was found that the wisdom tooth pierced the floor of the antrum. For a few days after extraction, some soreness was experienced in the region of the antrum, and also of the nares.

Donations to the Army Medical Museum.

(Continued from page 576).

No. 41. Dr. Louis A. Walz, Lexington, Ky., donates a cast taken from the mouth of a young man, seventeen years of age, containing two supernumerary teeth immediately behind the central incisors. These teeth erupted during his thirteenth year. (Fig. 24.)*



FIG. 25.



FIG. 26.



FIG. 27.



FIG. 28.

Dr. T. S. Hitchcock, of Oswego, N. Y., makes a number of contributions of his own handiwork:

No. 42. Carved plaster plaque, portrait of Dr. Thos. W. Evans. (Fig. 25);

No. 43. Carved plaster plaque, portrait of Dr. A. P. Southwick. (Fig. 26);

* Fig. 24 will be found on page 576, where it was published by mistake.



FIG. 29.



FIG. 30.

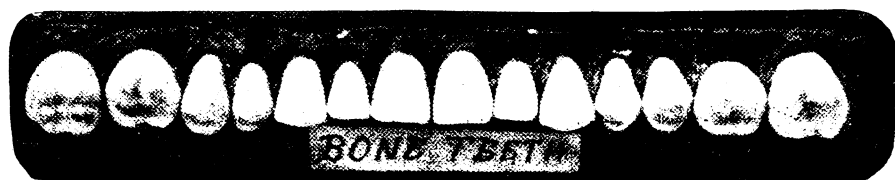


FIG. 31.

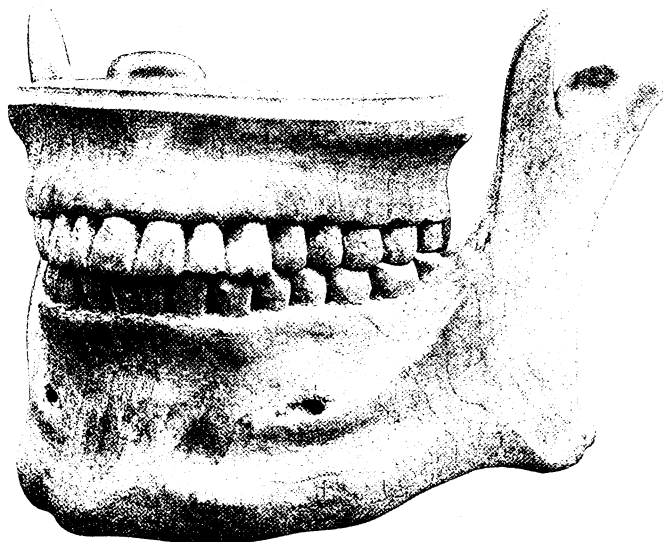


FIG. 32.

No. 44. Carved plaster plaque, portrait of Dr. Wm. G. T. Morton. (Fig. 27);

No. 45. Carved plaster plaque, portrait of Dr. John Greenwood. (Fig. 28);

No. 46. Set of artificial teeth carved out of horn. (Fig. 29);

No. 47. Plaster cast in which is imbedded a full set of natural teeth, no two of which were taken from one mouth, the whole set, however, showing uniformity of form. (Fig. 30);



FIG. 33.

No. 48. Set of teeth carved out of bone. (Fig. 31);

No. 49. Upper and lower jaw, with full sets of teeth, all carved out of wood and beautifully occluded. (Fig. 32);

No. 50. Beautifully carved figure of an hermaphrodite, copied from a drawing in a German medical work.
Dr. J. A. Robinson, Morrisville, Vt., makes the following donations:



FIG. 34.



FIG. 35.



FIG. 36.

No. 51. Two sets of artificial teeth, of which he writes as follows: "These two sets of teeth were worn by a lady addicted to the habit of eating clay or soft rock. This is the second set of artificial teeth she has worn out in the same manner after wearing out her natural teeth nearly to the gums. She was wearing the third set of artificial teeth when she died." (Fig. 33);

No. 52. Molar with concrement tooth. (Fig. 34);

No. 53. Otherwise sound canine with caries on the root. (Fig. 35);

- No. 54.** Central incisor worn away by the attrition of occlusion. (Fig. 36);
- No. 55.** Five teeth having abnormal roots.
- Dr. C. H. Haines, Dexter, Me., donates:
- No. 56.** Superior molar with unusually long roots, and also a very minute supernumerary.
- Dr. J. G. Crockett, Pulaski, Va., donates:
- No. 57.** Three cuspids with exceptionally long roots.

Electro-Deposit Bridge.

By DR. L. B. WILSON, Cumberland, Md.

The illustrated electro-deposit bridge is a duplicate of a case I have just inserted for an old gentleman.



The specimen will show for itself the extent of mechanical abrasion. A plaster impression was taken, then fusible metal poured in. After separating, a stout copper wire was attached, cleaned and placed in gold plating solution. After remaining in this solution until the shell was as thick as desired, it was removed and submitted to heat. The fusible metal fused and dropped out, leaving a strong, seamless, connected perfecting fitting bridge, that required no grinding or filing. The operation was painless.

The patient called by appointment. A plaster impression was taken, another appointment was made; then the bridge was cemented in, giving the operator and patient no more concern than if a rubber plate had been ordered.

Electro deposition of metals applied to dentistry is scientific, simple, perfect. In two weeks time sufficient knowledge can be obtained in this beautiful art to successfully work it. A perfect fitting crown for any tooth in the mouth is easily made.

Tin Foil Matrices.

By W. BOOTH PEARSALL, F.R.C.S., Dublin, Ireland.

Oxy-phosphate fillings are a necessity in daily practice, and, as it is not always advisable to use the rubber dam in the case of irritable or very young patients, some other means of excluding moisture must be sought. During the past ten years I have been able to keep such fillings moisture proof, during the progress of the chemical union that causes consolidation of the filling in the tooth cavity, by the aid of pieces of tin foil.

The cavity in the tooth is prepared in a suitable manner, and the margins properly shaped. The tooth cavity is filled with absorbent cotton carefully packed into it, after the use of the warm air syringe.

A piece of tin foil of suitable thickness is cut out, measuring one inch or one inch and one-half square, and placed in readiness. The filling is carefully mixed into a pasty mass. The cotton wool is removed, and the plastic filling gently packed into every part of the cavity.

Some of the overplus of the filling left on the mixing slab, is placed on the piece of tin foil. The tin foil is quickly placed over the tooth and the cavity, and folded over the lingual and buccal surface, or the palatal or buccal surface as the case may be.

The tin foil is *gently* brought into position with the forefinger and the thumb, or with the forefingers of the right and left hand.

A stroking action of a right hand finger, while the left index finger holds the tin foil in position, within or without the dental arch, will enable the filling to be solidly pressed into place in the cavity of the tooth.

The excess of material is thus squeezed over the teeth, and the tin foil can then be gently burnished over the filling, so as to make a contour suitable to the case.

In the case of bicuspid and molars, the patient can supplement the procedures of the dentist, by steadily closing the bite on the tin foil, and thus give the dentist a true contour of the masticating surface.

In many cases where approximal cavities in incisors have to be filled—the tin foil can be folded double, and passed between the teeth, before the filling is placed in the cavity. This flexible band of metal can be gently drawn into place *around* the tooth, and thus cemented on the enamel surface on each side of the cavity, so that the moisture is completely excluded during the setting of the filling.

Once the filling sets hard, the tin foil can be peeled or scraped off the tooth or teeth, and the dentist will find if these details have been skil-

fully and gently carried out a well contoured filling with a smooth surface, that needs very little final trimming.

**Tin Foil Matrix
with
Oxy-Phosphate.**

Sometimes I place a band of tin foil around a tooth, and then pack in the oxy-phosphate filling. The band is brought to its intended place, and I then envelop tooth and band with a square piece of tin foil smeared with the filling.

This is rubbed or folded into shape and position, and all moisture is excluded. With young children tin foil used in this way, will be found of great service to the dentist, as it does not give them any pain or discomfort; while at the same time the filling is kept protected from the action of the saliva during the progress of setting.

I am of opinion that oxy-phosphate fillings treated in this way, will be found to be harder and more durable under ordinary conditions than when the plastic mass is packed and burnished into position, and contoured with oiled instruments.

I have had excellent results during the past three years by using both Dr. W. V. B. Ames "Metalloid" and his "Oxy-phosphate of copper" fillings in young mouths. I have kept careful records of these fillings by means of charts, so that what I bring forward is something more accurate and valuable than an "opinion" or an "impression" on the matter, or the fact that they have "an unprecedented sale."

Few young children seem to me to bear with patience the use of the rubber dam, and as a willing patient should be the rule rather than the exception, with patients of tender years, I offer my experience in the hope that it will meet a want in ordinary practice, that is not altogether filled by the use of rubber dam, napkins, absorbent paper or even a saliva ejector.

The tin foil commonly used for filling teeth is much too thin for this purpose. I prefer to use tin foil somewhat of the stoutness of writing paper, as it will bear the necessary pressure and manipulation without breaking.

Sometimes I fold the square of tin foil into a strip or band of three or four thicknesses as may suit the space between the teeth, and thus gain sufficient support to bring pressure to make a contour filling above, or below the gum, as the case may be.

A few experiments on some natural teeth set in plaster, will show anyone who cares to carry out this procedure, that tin foil can be made a valuable adjunct, in many cases where oxy-phosphate plastic fillings have to be used.

I showed this method to several dental friends at my house last August, and they were much pleased with the adaptability of the tin foil, to the purpose I have endeavored to describe.

SOCIETY PAPERS

A Study of Physiological and Pathological Conditions of the Apical Portion of the Cementum.

By ISRAEL P. WILSON, D.D.S., M.D., Burlington, Ia.

Read before the New Jersey State Dental Society, Asbury Park, N. J., July, 1898.

The successful treatment and ultimate preservation of a pulpless tooth, depends almost entirely upon the condition of the cementum around the apical foramen. If treatment and filling have not restored a physiological condition, nature will be unable to come to the rescue of the diseased portion of the tooth.

A study of the anatomical structure of the end of the root when in a physiological condition, its direct communication with the pulp, and the greater danger of lesion at that point than at other portions of the cementum, is the object of this paper.

It will be remembered that while the periphery of the dentine separates the pulp circulation from the cementum, there is at the apical portion of the root direct contact of the pulp with cementum, so that the lacunæ send out their processes or canaliculi to the root membrane on the one side, and to the dental pulp on the other.

Every day's practice reminds us of the fact that a tooth has two distinct sources of life, each independent of the other, the one through the pulp and the other through the pericementum, and that a tooth is not dead until both supplies are entirely cut off. If arsenic is applied to the pulp for devitalization, its deadly effect stops at the periphery of the dentine. Nature has wisely placed there a line of demarkation which may not be passed by the deadly drug. It would seem that this could not be so, if a vital connection existed between the cementum and the pulp. The arsenic would devitalize the one as well as the other. But this disputed question of nerve connection between the cementum and the pulp need not be discussed here. There is, however, an exceedingly small portion of the

apical cementum that comes in direct contact with the pulp, and doubtless has vital connection with it.

**Pulp Removal
Advantageous
in Pyorrhea.**

The thickness of the cementum at the end of the root determines the extent of contact with the pulp. The cementum at this point is thicker and more vascular than in other portions of the structure. Through it pass the blood vessels and the nerves that supply the pulp. But before these vessels and nerves enter the pulp canal, the peridental membrane, and the gums receive from tributaries their vascular and nerve supplies. If the pulp supply is cut off by devitalization, the pericementum receives an increased supply from the flow that has been diverted from the pulp. Like the currents of water that form the deltas of a great river, if one stream is cut off and the channel obliterated the volume of water is increased in the other channels. This accounts for the fact, doubtless, that the destruction and removal of the pulp and the successful filling of the canal, increases the vigor of the pericementum, as is proven by the fact that such teeth are rarely attacked by pyorrhea alveolaris. Indeed the devitalization of the pulp in the early stages of this disease will go far towards arresting its progress. A tooth, then, receives compensation for the loss it sustains in the destruction of the pulp, yea, we may go farther and say that an increased supply of nutrient material is diverted from the internal circulation to the external, thereby strengthening the pericementum and fortifying it against the ravages of disease. This increased functional power of the root-membrane, to build up tissue, also increases its power to tear down and carry away dead and useless material, as in absorption of dead matter.

I need not dwell longer on the physiological relations of the apices of the roots with the surrounding tissues. Unlike the rest of the cementum, it does not come in contact with the dentine but does proximate the pulp and doubtless has direct communication with it.

I have referred to the fact that the pulp circulation terminates at the periphery of the dentine, and that the devitalizing effect of arsenic does not pass this boundary line, but the apical cementum is evidently not exempt from this danger.

**Danger
in Repeated Arsenical
Applications.**

My observations have led me to believe that the unguarded use of arsenic is attended with more danger in devitalizing pulps and increasing the uncertainty of complete success of the operation than any other cause. I am not prepared to abandon the use of the drug, but I have modified my administration of it materially in my practice. I believe that a sufficient quantity of arsenic to entirely

destroy vitality, so that no pain whatever is experienced by the patient in removing the apical portion of the pulp, is dangerous practice. This conclusion is forced upon me from sad experience. Having a record of the teeth which I have treated and filled for over six thousand patients, covering a period of twenty-eight years, I write from conviction and not from conjecture. We have all observed that a moderate application of arsenic for twenty-four to forty-eight hours will usually devitalize the bulk of the pulp, while the apical portion may remain alive. Here is a temptation to make a second and sometimes even a third application which always endangers the life of the apical cementum. Our patients will plead for more thorough devitalization, and out of humane considerations we are too apt to yield to their entreaties, and apply more arsenic. When this is done I am satisfied that the apical cementum will almost certainly share the fate of the pulp, and necrosis of those tissues is the result. The removal of the remaining portion of the pulp and the filling of the canal will, of course, be accomplished without further pain, and all for the time seems to be well. Our patient may remain so well satisfied with the operation, that he will not return with any complaints, and yet if questioned about the condition of the tooth, he will likely say, "Oh, it doesn't give me any particular trouble, it doesn't ache, but it feels a little uncomfortable at times." On percussion we will find the tooth a little more sensitive than the others. Hot drinks will at times affect it. If one sits in a draft, or takes cold, this injured organ is first to respond. Yet it rarely assumes an acute form; the disease becomes more of a chronic nature. It is one of those cases that we usually dismiss by saying, "You have taken a little cold, or you have a slight touch of neuralgia, and will soon be better." But this dead cement remains as an irritant, and nature undertakes the task of breaking down and carrying away the foreign material. While the solution of the lime-salts is going on, the peridental membrane endeavors to come to the rescue, and a superabundance of cement is deposited around the apex.

I have no doubt but it has been observed by most of my hearers, that on extracting such teeth, the apical cementum is found to be absorbed, while an hypertrophied condition of the adjacent cementum has sometimes taken place. This is a vain effort on the part of nature to create a physiological condition.

My conclusions, then, are that arsenic should be used sparingly and that second applications should rarely if ever be made. It is not usually very painful to remove the apical portion, if the operation is instantaneous, and a spring-tempered instrument is used that is small enough to pass freely to the apex, but not through the foramen, when a whirl of

the instrument will sever the remaining pulp tissues. The Donaldson broach with the frail end of it cut off will do the work.

In this way a physiological condition of the entire cementum has been preserved, when if the canal is closed tightly with medicated cotton and is kept in an aseptic condition for one week, and is then properly filled, no subsequent trouble may be expected. My method is to medicate the cotton to be placed in the root with beechwood creosote, and then close up the cavity tightly with aromatic sandarach varnish, and let it remain one week before filling. A failure to remove small portions of the apical tissues of the pulp, and then without embalming those tissues, to proceed to filling will almost certainly create a pathological condition of a sluggish, if not of an acute character, and we will have symptoms similar to those above described from arsenic poisoning. While such teeth will be tolerated by our patients, and drag out an uncomfortable existence for many years, yet such an operation cannot be pronounced a success. The irritating matter at the apex of the root will keep up an annoying sensation, but not enough to force a fistulous opening which would leave the tooth more comfortable, but not relieve the pathological condition.

Death of the apical cementum, then, means disease. The functional power of the pericementum is aroused to increased activity in order to break down and carry away the extraneous matter, at the same time furnishing a superabundant supply of nutrient material for restorative purposes, and excementosis of the normal structure of the cementum is the result. The breaking down of tissue is always recognized by nature as a call for new supplies, and whenever the cementum becomes impaired, a normal quality of the same tissue is deposited, but usually abnormal in quantity. But these deposits of nutrient material cannot restore to life the necrosed cementum, and it matters not how thoroughly the root may be filled, there must continue to exist a feeling of discomfort if not actual pain while the irritating cause remains. How many of us have had experience in removing root fillings for the purpose of treating teeth that have a "sore spot" at the end of the root, when we have found the canal well filled, and in an aseptic condition. Further treatment through the canal of such a tooth, will usually prove unavailing. The lesion cannot be removed that way. The dead cementum is the cause of offence, and nature rebels.

I have desired in this short paper to emphasize the importance of a more careful study of physiological and pathological conditions of the cementum at the apex of the root, because of the greater liability of disease at that vulnerable point. The importance of removing every vestige of the pulp, and of antiseptic treatment, as well as perfect root

filling have claimed the careful attention of the profession for years, but the danger of creating a pathological condition of the apical cementum from the careless use of arsenic, producing an irreparable injury, has not claimed of us the careful attention which its importance demands.

Some years ago I endeavored with my microscope to make as careful a study as I was capable of doing of this part of the tooth structure, and I became satisfied that dentists often produce diseases unwittingly in devitalizing pulps, forgetting the power of the drug employed, and the exposure of the apical cementum to its deadly influence.

Pulp Mummification.

By J. A. WAAS, D.D.S., Hammonton, N. J.

Read before the New Jersey State Dental Society, Asbury Park, N. J., July, 1898.

The subject of pulp mummification has not, so far, at least, as I have been able to ascertain, been taken up to any great extent by our profession in the United States, and upon being requested to read a paper before you at this meeting, it occurred to me that a brief account of my experience with this method of treatment during the past three years might be of interest to some, if not all, of you.

The treatment is, as its name indicates, a desiccation or hardening and preservation of the pulp, and is intended as a substitute for the old and common practice of pulp devitalization and removal preparatory to the filling of a tooth, the new treatment consisting in the application to the pulp of the tooth of a medication for the purpose of effecting its mummification.

Among the members of the profession who first introduced and advocated the treatment were Drs. Herbst, Miller and Sorderberg, and I consider that they have laid the dental profession of the present day under a debt of gratitude for their researches and experiments which have resulted in bringing the practice of pulp mummification to its present advanced stage.

I myself, after three years practice of the treatment am more enthusiastic than ever in its praises, not only because it lessens the pain and suffering on the part of the patient, but because of the satisfaction I have in knowing that when a tooth is once treated in this way it is, I think, so far as regards the pulp structure of the tooth, treated for all time, the

pulp being as harmless and inert as the subjects of King Pharoah shut up in the Pyramids.

The treatment is of especial value in cases of obscure supplementary or unsuspected branches of the pulp, which, under the old removal method, are simply beyond the reach of the highest dental skill, but which, under the mummification treatment are rendered harmless even though their presence is unknown to, and unsuspected by the operator.

In this connection I may instance an experience of my own some years ago.

**A Personal
Experience.**

An upper, right, first, bicuspid had troubled me for a long time with abscesses, and several of my fellow members of the profession had at different times fished and filled and re-fished and re-filled the pulp canal while I sat in the chair and wondered if my patients ever had to undergo the agony that I was experiencing. Finally I thought that the trouble was over, as two years passed without any further manifestation of it, and I had a gold crown applied to what was left of the tooth. Hardly had this been done, however, before another abscess formed, which was treated through the fistulous opening. But about six months afterwards, still another appeared and in despair I had the tooth extracted, and then discovered a small supplementary root or branch of the pulp which had been causing the trouble all the time, and which had been entirely overlooked and unsuspected by all of the operators who had previously treated me. Further than this, the pulp was in such a position as to be practically inaccessible, so that effective treatment of it under the old method would have been impossible even if its presence had been known.

Now the mummification treatment would have taken care of this supplementary branch when my tooth was first treated and I should have been saved the time, expense and pain, both in and out of the chair, which I suffered on account of it.

I expect that some of the old practitioners who taught us younger men to remove *every* particle of pulp from *every* root no matter what its shape, or how difficult of access, will say that the mummification process is unscientific, but after nearly sixteen years of "removing" pulps with *more or less* success, I was quite ready to look with favor on anything that promised to prove a *successful substitute* for the removal of dead pulps from difficult bicuspids and molar teeth.

I think, gentlemen, that we owe it to ourselves, to our patients and to our profession to do everything that we can to save our patients from the excruciating pain of removing pulps supposed to be dead, but which are not, and that we should, therefore, be ready and willing to substitute

for those medications for the removal of pulps which are supposed to do the work painlessly, *but do not*, a method which will not only simplify the operation, but *will* do the work painlessly and will permit the pulps to remain in the teeth incapable of causing any future trouble.

A large number of dental practitioners use cotton fillings in the pulp canals, and the most that can be said of a successfully applied cotton filling is that it provides an inert or dead substitute for the former pulp, but *whatever* material is used for filling the pulp canal, there is a possibility of future trouble, for I care not how particular we are in removing pulps, how thoroughly we do the work, or what material we use to fill the canal, how many of us can say that we never had abscesses to treat after teeth had been filled and were apparently all right, perhaps for years?

The treatment which I have been using is that which was published in the *Cosmos* of November, 1895, page 922, and consists of the following medications:

**Parts for Mummifying
Dead Pulps.**

Dried Alum	3 i
Thymol.....	3 i
Glycerol.....	3 i
Zinc Oxide Q S. to make a stiff paste	

I follow the directions of Dr. Sorderberg to the letter, and out of 61 cases which I have treated during the past three years to April 1, 1898, I have not met with *one failure* so far, not even *one* complaint of tenderness.

Such a positive statement as this I cannot make regarding my previous work of filling pulp canals, although I think that I have always been as careful as the average operator.

The patients treated by me ranged in age from six years to fifty-five or sixty years, and were in every condition of health and illness, from that of robust vigor to a late stage of tuberculosis.

The following is a detailed record of these treatments, and while I am reading the record I will hand around a few teeth which I have extracted from time to time, and without fear of contradiction, I will make the assertion that there is *not one* operator present who could extract the pulp in its *entirety* from any of the teeth in the collection, with perhaps one or two exceptions. The gold crown is the one that was extracted for myself, the roots of which I unfortunately neglected to take when they were extracted, but they were as I have previously explained.

Table of Cases from Practice.

- January 15, 1896..... Mrs. F., age about 40, upper left first bicuspid.
- March 3, 1896..... Miss L. R., age about 22, lower left six year molar.
- April 25, 1896..... Miss L. R., age about 18, lower left six year molar.
- April 30, 1896..... Mrs. J. B. S., age about 25, lower right canine.
- May 2, 1896..... Mrs. K., age about 50, upper left twelve.
- May 25, 1896..... Mr. S., age about 30, lower left wisdom post cavity.
- July 1, 1896..... Mrs. G., age about 35, upper left canine. This patient was dying with consumption and could not stand a prolonged operation, otherwise I would not have treated the canine in that way, as the pulps in the six anterior teeth are comparatively easy to remove, and, again, I would not run the risk of discoloration. However, I have never detected any discoloration in any of the bicuspid or molars which I have mummified. The patient died about five months after the operation (not from the mummification process, however).
- August 5, 1896..... Mrs. F., age about 55, lower left six year molar.
- August 19, 1896..... Miss A. S., age about 22, upper right six year molar.
- September 12, 1896.... Mr. J. B., age about 24, lower left second bicuspid.
- September 15, 1896.... Mr. C. L., age about 40, upper left six year molar.
- October 7, 1896..... Miss R. M., age about 16, upper left second bicuspid.
- October 10, 1896..... Master J. B., age about 13, right second bicuspid (upper).
- October 17, 1896..... Mr. J. Mc., age about 40, upper right six year molar.
- October 26, 1896..... Mrs. R. C., age about 50, upper right canine. Extremely nervous. Wished the tooth extracted sooner than have pulp devitalized and removed as she had a "painless" pulp removed some time previous by another operator.

- November 3, 1896.....Mrs. B., age about 35, lower left twelve year molar.
- November 3, 1896.....Miss G. K., age about 15, lower left six year molar.
- November 3, 1896.....Mr. R. C., age about 25, upper left six year molar.
- January 2, 1897.....Mr. A. W., age about 21, upper right wisdom post cavity. Absolutely impossible to remove the pulp.
- January 13, 1897.....Miss M. B., age about 25, lower right six year molar.
- January 15, 1897.....Miss M. B., age about 25, upper right first bicuspid.
- January 19, 1897.....Mrs. B. A., age about 45, upper right six year molar.
- February 9, 1897.....Miss N., age about 20, upper left second bicuspid.
- February 16, 1897.....Miss E. J., age about 20, lower right six year molar.
- February 29, 1897.....Miss F. F., age about 25, lower left six year molar.
- March 9, 1897.....Mrs. M., age about 60, lower right twelve year molar. The only natural tooth in the mouth; would not have it extracted.
- March 29, 1897.....Mr. H. H., age about 30, upper left second bicuspid.
- April 12, 1897.....Mr. A. K., age about 25, upper left first bicuspid.
- May 5, 1897.....Master L. S., age about 12, upper left six and lower right six year molar.
- May 27, 1897.....Mr. P. W., age about 21, lower right twelve year molar.
- June 4, 1897.....Miss A. D., age about 25, lower left twelve year molar.
- June 5, 1897.....Mr. R. M., age about 21, upper right six year molar.
- June 28, 1897.....Mrs. F. R., age about 25, lower right six year molar.
- July 7, 1897.....Mrs. C., age about 50, lower right six year molar.
- August 9, 1897.....Miss M. L., age about 15, lower left six year molar.
- August 9, 1897.....Mrs. R. M., age about 50, upper left wisdom.

- August 23, 1897. Miss M. N., age about 25, upper left second bicuspid.
- September 21, 1897. . . . Mrs. H., age about 30, upper right twelve year molar.
- October 31, 1897. Mrs. W. B., age about 35, lower right wisdom.
- November 3, 1897. Mrs. W. E., age about 30, lower left and right six year wisdom.
- November 6, 1897. Master B. S., age about 13, upper left second bicuspid.
- November 8, 1897. Miss S., age about 22, upper right six year molar.
- November 11, 1897. . . . Dr. C. S., age about 35, lower right twelve year molar.
- November 18, 1897. . . . Miss M. L., age 6, lower left temp. molar.
- November 29, 1897. . . . Miss L. M., age about 25, lower right twelve year molar.
- December 6, 1897. Miss M. M., age about 25, lower left six year molar.
- December 13, 1897. . . . Miss V. A., age about 17, lower left six year molar.
- December 14, 1897. . . . Miss S. A., age about 25, lower right second bicuspid.
- December 27, 1897. . . . Mr. R. B., age about 35, upper left six year molar.
- January 9, 1898. Mr. P. S., age about 45, lower left twelve year molar.
- January 13, 1898. Mrs. E. L. A., age about 25, lower right second and upper left first bicuspid.
- January 21, 1898. Mr. J. Mc. C., age about 30, upper left six year molar.
- February 25, 1898. . . . Miss N. R., age about 20, upper right six year molar.
- March 3, 1898. Mrs. A., age about 55, lower left twelve year molar.
- March 4, 1898. Mrs. H., age about 35, lower left wisdom.
- March 9, 1898. Mrs. E. S. A., age about 30, upper left six year molar.
- March 11, 1898. Mrs. H. W., age about 37, lower left second bicuspid.
- March 28, 1898. Mr. F. F. M., age about 40, upper left six year molar.
- April 5, 1898. Mr. R. B., age about 18, lower right six year molar.

I think, Mr. President, and gentlemen, that you will agree with me that the results achieved have been ample warrant for my favorable view of pulp mummification, for while I cannot say what the future may develop, I think it is a remarkable record to have treated so many teeth without one of the patients having had even a moment of tenderness on account of a tooth so treated from the time of leaving my office to the present.

The greater number of these cases have, of course, been patients in my own town, and some of them have been in my office several times since the treatment for other operations, and I was always anxious to examine the teeth and inquire as to their condition, and have certainly felt more than gratified to hear nothing but favorable reports.

The successful treatment of dead pulps by mummification is not the only benefit derived from this method of treatment, for besides its effectiveness, it is a great saver of both time and labor, and as all of us are not blessed with a practice which permits us to charge what we please, I consider this an important factor in enabling us to bring our charges down to a reasonable basis and within the means of those from whom the bulk of our practice is derived.

As to the saving of time it seems manifest that this must follow from a method which permits the treatment and filling of the tooth in half the time or less than would be required to remove the pulp and fill the canal, while the wear and tear upon the nerves of the operator himself are reduced to a minimum because of the serene satisfaction that he feels in knowing that what has hitherto been the most painful and difficult part of the operation, is now being done without causing either the patient pain or the operator inconvenience.

The assertion has been made time and again by old practitioners that apical ends of the pulps must of necessity remain in teeth when they cannot be removed, and it is also true that broaches, root reamers, and other dental instruments, when broken off have been left in canals for years without causing any trouble. If such is really the case (and we all know that it is, although we very reluctantly admit it) why should we not try to permit the pulp itself to remain, in a hardened, dried-up condition? The process of mummification is surely worth a trial and I feel certain that any operator who will look the matter up in the article referred to will feel amply repaid for the trouble and will be thankful to resort at some time to the mummification of a pulp, that is impossible to remove from some inaccessible cavity, instead of being compelled to extract the tooth in order to give relief.

President's Address.

Cruel Professional Manhood.

By H. D. WILSON, D.D.S., Bainbridge, Ga.

Read before the Georgia State Society at Lithia Springs, Ga., June, 1898.

In this paper I shall neither discuss law nor ethics. I scorn the idea that "gentlemen" must be obligated before they can perform the duties of professional life. Professional issues are but the offspring of professional patriotism based upon principles. No organization lives, or can live, whose paramount desire emanates not from an unwritten law that should control the acts of men.

Gigantic strides in either theory or practical demonstration is no evidence of success in any of the professions. A twelve-story brick building erected by the most thorough architect on earth, trimmed and furnished by the most tasty artist, is presented to the gaze of men as a thing of beauty and is admired by all as a finished piece of nineteenth century genius. But, gentlemen, the first question the expert will ask is, of what kind of clay is the brick made? I am not an expert, but I know a first-class brick when I see one. Allow me to ask a very important, in fact, the most important question that confronts us to-day: Of what kind of material is the dental profession built?

I can best answer this question by retrospection.

Having earnestly labored for twenty-seven years in the dental profession, experience has taught me one great lesson: Mankind are brothers in truth, but strangers in the underlying principles of true manhood that should cement us into one grand and glorious brotherhood, whose united labors could but result in the elevation of humanity and make life worth the living.

Having studied this lesson well and seen it demonstrated in living pictures as I mingle with a selfish world, I am deeply impressed with the inevitable fact that, unless we, as a profession, clothe ourselves in the chaste garments of true professional manhood we can never impress the world with that sublime confidence that will make appreciation greet us with a smile and the hardships of life seem but a recreation.

I am not here to chide but to admonish. We have inherited too much to be ungrateful, and as I look back today through the telescope of gratitude to where the profession was cradled in the lap of anxiety,

nursing from our mother's bosom a principle that has fed, developed, educated and given expression in the manhood of the profession of today, I thank God we can entwine around the tombstone of her memory a wreath of jewels whose price we cannot value because of the hardships and sacrifices it cost us to win, and as I catch the inspiration reflected from the heart of these precious gems and realize how little I have contributed to the moral and righteous impetus that should continually stimulate us, I can but say to you, "Well done, noble sons, but put not up the unsheathed sword until the victory be won."

Victory won—what a glorious acclamation! But, gentlemen, we are today tenting at the Chickamauga of our battle. Let us remember we are not drilling and equipping soldiers for a war between a pug and a mastiff; neither are we training workmen for the rifle or cannon, but when we tap the drum for drill it calls the inner manhood to duty. Our welfare is not for a day or a year; it is not waged with grape and canister. Our enemy is not drifting upon a blockaded sea; neither is it confined upon an isolated island.

No, gentlemen, his march is as insidious and his diplomacy more subtle than that of a Spaniard. Silently has he crept into our very natures and injected his damning poison into the very lifeblood of not only our profession, but the business world at large, and unless its seductive influence is checked by a combined effort it will paralyze every desire that springs from a noble purpose. This enemy does not confront us in battalions, but single-handed they grapple us for supremacy. The first is selfishness.

It stealthily closes its icy fingers around the heart of noble lives and freezes the inspiration of tender thoughts. It paralyzes the generous hand of charity. It bombards the approach of Godlike intention and shuts out the sunshine and beauty of congenial intercourse, thereby crystallizing life into a morbid appetite that consumes everything within its reach and ignores the disappointments and sorrows of others. Cut him down!

Let us remember that he who would attempt to vitiate public taste for worthy merit by envy's insinuating poison lives only to bury his own success and cultivate the appreciation of his associates for the lofty manhood he disdains to honor. Cut him down!

Egotism, thou cheeky intruder, that has clothed thyself in the supposed robes of personal superiority complacently smiling upon a struggling world, drinking in the perfumed air of cultivated pomposity, thou art not only an obstruction in the peaceful strain of Godlike progress, but a bloated nightmare that disturbs the dreams of energetic manhood. Cut him down!

One more, and I think I can safely say, the hydra-headed monster of them all, hypocrisy, thou imp of hell, born with no head but two faces, presenting to the world a smile that is sweetened with the nectar of deception. Thou abortion of Paradise that died to virtue but lived to poison the very lifeblood of national, State and individual success, where will I dig a grave to bury thy infernal carcass? Cut him down!

Have we slain them all? Then let us dig one grave and in one coffin bury them and erect a monument over this grave covered with ivy, that the nightingale of peace may build her nest in its branches and sing her sweetest songs of victory, that we may catch the inspiration of her new-born melody and in future mingle our voices into one grand chorus, whose pathos will be peace on earth, good will to men.

This is a glorious victory, but it is on paper. Believe me, it is the expression—nay, the one business desire of a heart that longs to live to see it consummated in the dental profession that we, as sons, should love it with such a passion that sacrifice would be a pleasure to help us win the encomiums of an anxious world.

It can be accomplished, and speedily, if we will only use the artillery of true professional manhood. This one gun shoots a cartridge the contents of which will destroy a whole army of invaders. What does it contain? The shell is made of gratitude, the powder is conscience, the missiles of death are brotherly love, contentment and professional patriotism.

Gratitude makes us return good for evil. Conscience is the disinfectant that purifies the cesspool of society, stands sentinel at the threshold of virtue and protects it from the insidious approach of the seducer. It dictates every message that is penned by the hand of electricity. It is the food that stimulates and gives expression to every lecture that is delivered in a dental or medical college. It is the cement that crystallizes every organization into a noble ambition. It is the pen that signs every code of ethics. The political cartridge has none. It pulls the throttle of national, State and municipal government. It is the only individual safeguard, and, with "reverence," I say it gave birth to Christ, planned the crucifixion and gave this sin-cursed world a Saviour.

I shall not analyze the other three, for conscience executes this mission.

The question for us is, shall we load the cannon today? If so, then we can meditate upon the results of united hearts, souls and minds. Then we will inhale the fragrance from a bouquet whose colors were blended by different hands and tastes, that grew in different gardens whose concentrated beauty extracted from its heart all the mingled sweetness it contained and breathed one breath of perfume into our fainting soul that would make us forget our sorrow and thank God for the diversity of

thought, opinion and flowers, that could be so united as to produce a calmness that would be akin to divinity.

Gentlemen, as I look into your upturned faces today, realizing that the true and tried members of this organization are the heart of our profession, and it is this heart, whose determined pulsations, when injected into public sentiment and appreciation, a recognition of what combined effort springing from pure motives can do, let us as a body and profession in future empty the glorious results of noble lives into the reservoir of true professional manhood, that the great engine of human endeavor may pump from its virtuous bosom a liquid whose stream will enable it to pull upon the magnificent railway of modern progress a vestibule train freighted with deserving merit.

Plastic Fillings.

By DR. R. B. ADAIR, Atlanta, Ga.

Read before the Georgia State Society at Lithia Springs, Ga., June, 1898.

It is not my purpose to enter fully upon the merits of all the plastic materials that have been suggested or even used in the various stages of dental development, but rather to confine myself to two, which after having been used, well tested and tried, have won their way to professional recognition, and which, I am sure, have come to stay. Of amalgam and cement, I believe it can be said—These ye have with you always.

In an article which I read before the Odontological Society of Atlanta I took the position that an amalgam was a mechanical mixture; since that time I have learned from the latest works of Dr. Hodgen's Dental Metallurgy which treats of amalgams and their structure and practically demonstrates that they are essentially chemical compounds. The mere fact that the relationship of the components of an amalgam may be disturbed and the ingredients separated by heat does not militate against the chemical combination theory, as many chemical compounds may readily be broken up by application of heat. Amalgam has occupied a most unique place among the materials used by the dentists for the preservation of the teeth. Its friends made for it the greatest of claims, its enemies denied for it everything. Dr. J. Foster Flagg, the greatest exponent of plastic fillings, has said that in proportion as teeth need saving gold is the worst material to use; and on the other hand, the gold exponents claim that in proportion as teeth need saving, amalgam is the worst.

We suppose, however, that at the present day hardly an up-to-date dentist could be found, who does not use amalgam to some extent in his daily practice, all having recognized at least some of its merits in preserving teeth.

We have no doubt but that the very earliest dentists felt the need of a durable plastic filling and sought for it. Some in their enthusiastic search for such a filling resorted to the practice of pouring into the cleaned cavity a *melted* metal of a low fusing point.

So that when about sixty years ago amalgam was utilized for filling cavities in carious teeth, some of its enthusiastic advocates regarded it as a special providence, while not a few of the less progressive of the profession then regarded it as an imp of darkness.

Various objections have been at times urged against amalgam as a material for filling, such as the discoloration of the teeth, oxidation of the material itself, and its liability to shrinkage or expansion. To these may be added the non-compatibility of the material with the tooth substance, and the possible electrolysis; while many a maiden fair would urge as more objectionable than all of these, its lack of harmony in color, with the ruby tint of pouting lips and the whiteness of pearly teeth, insisting that *gold*, which is always a matter of consideration in the affairs of Cupid, is desired by suitors, if not in the pockets of an expected father-in-law, at least in the teeth of a bride elect.

We insist so far as color is concerned that the matter of preservation of the teeth is of so much greater importance that the objection does not require serious answer. While on the question of shrinkage and expansion, all reasonable objections have been overcome by the very scientific and interesting investigations of Dr. Black, who has given us a formula for amalgam that has a minimum of shrinkage or expansion composed of silver 68.5, tin 25.5, gold 4, zinc 1, bismuth 1. This also retains its color, has good edge strength, is capable of resisting the crushing power in mastication and is very plastic in manipulation.

**Silver
Amalgam.**

I here mention a few facts showing the durability of an amalgam consisting only of silver: Only yesterday I had occasion to examine fillings inserted by my old preceptor some thirty years ago; owing to the extent of oxidation I felt assured that the filling was composed essentially of silver amalgam. I have frequently during my practice operated for soldiers of the late war, who informed me that fillings then in their teeth were inserted while in camp, by dentists who were their comrades in arms, who simply prepared the filling by filing off portions of silver coin and mixing it with mercury, thus forming a simple amalgam. These fillings I found were still preserving the teeth beautifully.

**Preparing Cavities
and Filling
with Amalgam.**

I adopt the following method in preparing cavities and filling with amalgam. I would here state that I consider it good practice to fill all teeth posterior to the first bicuspid with amalgam.

I prepare my cavities with as much care as if I were going to insert gold fillings and where the edges of the cavity are very frail and in deep seated cavities, I think it good practice to mix up a little cement to the consistency of thick cream and flow this into the cavity previous to filling with amalgam; but you must not allow the cement to come in contact with sensitive dentine or near exposed pulps, for it will surely result in the death of the pulp. Always flow first a film of the oxide powder mixed with oil of cloves and beechwood creosote equal parts, then remove excess of liquid with bibulous paper before introducing cement. I have the amalgam ready prepared and insert it while the cement is still plastic.

Introducing the amalgam in the usual way I use sufficient pressure to force out the excess of cement. This leaves the cavity filled with a cement lining with a metal veneer.

I think the amalgam should always be packed in with the same care used in filling with gold, using smooth-surfaced pluggers and rotary motion. Then finish by carefully burnishing over the surface tin-foil or bibulous paper. This forces out all excess of mercury and compresses the mass in one direction. Then at a subsequent sitting, say at any time after twenty-four hours, polish off the filling nicely and smoothly with the margins of the cavity, being careful to leave no overlapping material at any point, and especially no fullness on grinding surface.

This polishing can best be done with sandpaper disks, polishing strips, engine burs and corundum stone as for gold fillings.

To illustrate the importance of careful manipulation, I invite your attention to the following experiment, because I believe that a large majority of the failures in amalgam fillings are attributable to faulty work either in not properly preparing the cavities or in not properly condensing the amalgam in the cavity.

Experiment by filling one little glass tube with amalgam with your eyes open. The other with your eyes shut. The result shows great defect in the one filled with your eyes shut. Many dentists who condemn amalgam do not make one good filling a week and try to prejudice their patients against amalgam fillings by saying: "Oh, that is cheap work."

For approximal fillings in the bicuspid and molars, I am a strong advocate of the use of the matrix, using two thin wedges forced in between the teeth one from the outside and the other from the inside, and

when the fillings are made these incline wedges can be removed without disturbing the fillings.

Cement
Dangerous. With regard to cement Dr. Harlem has made the statement that any tooth with the enamel ground off sufficiently to properly receive a cap or

shell crown, whether for single crown or bridge work, will eventually present with pulp destroyed by the phosphoric acid penetrating the dental tubuli, I have seen so many cases in my practice when teeth apparently sound with live pulp had been crowned and abscessed, that I am inclined to believe there is some ground for the belief.

Recently my attention has been called to a preparation made by J. H. Doyle, of Atlanta, which promises to be what we are seeking in the way of cement for crowns and bridges. It is a non-conductor, is insoluble in any of the acids contained in the oral cavity and is not an escharotic.

He brought it to my office to show me what a nice thing it was for cementing on a new tooth when one was broken off a rubber or celluloid plate. After he had demonstrated its practical use in repairing broken plates quickly and better than by vulcanizing we experimented with it as a cement filling. I will pass around a tooth filled with it for your examination. I have never seen a filling of any material that adhered so closely to the walls of the cavity. The color can be made to represent the natural enamel so perfectly that it is hard to detect. After these experiments the idea occurred to me that it would be a better cement for a crown and bridge work than any of the cements now in use, so I have brought along a crown cemented on a tooth with it to let you see what it will do. We will cut the crown off the tooth and see whether it hermetically sealed it. Dr. Doyle calls it his Artificial Dentine and Artificial Gum Compound.

It is composed of cellulose, kaoline, salicylic acid, in combination with oxygen, hydrogen and carbon.

Hygiene.

By Dr. M. N. MIXON, Rome, Ga.

Read before the Georgia State Society at Lithia Springs, Ga., June, 1898.

The word hygiene is derived from a Greek word, and means health. We have only to point to the elaborate directions in the Mosaic laws for the preservation of health through scrupulous attention to cleanliness, the

isolation of the sick and the extreme care in the use of wholesome articles of food and drink to show how early it was appreciated.

The care and preservation of the teeth is of the greatest importance and I believe most dentists claim this should begin with the eruption of the first temporary teeth, but to my mind that is not the starting point. I think every mother should begin long before the birth of her child to follow the laws of hygiene by taking plenty of exercise, eating such food as will build up the osseous system, and then, when the little fellow is launched on the tempestuous sea of life, he will have sufficient bone substance in the system (with the proper care on the part of the mother, until the child can understand what to do) to reasonably expect good teeth, although the parents may not be blessed with them.

I recommend the judicious use of the brush, pick and silk ligatures. I believe that the use of the brush can be abused. Of course, we all advocate rotary motion. I am of the opinion that if we use the brush once or twice a day and then use a napkin with our finger once or twice a day in cleaning our teeth, that we would not find so much recession of the gums, which causes us so much annoyance and brings us so many hard questions to answer as to the cause.

I have noticed for a long time the ill effect wood toothpicks have upon the gums. If you notice those cases where the teeth lap in such a way that a V-shaped space is left at the gum, if wood toothpicks are used the gums grow spongy and soon become inflamed at that point, caused by irritation. Then food begins to lodge there and tartar to accumulate from one tooth to another until a diseased condition soon appears that is sometimes very hard to control, and if the system is not in a good condition pyorrhea follows; then you frequently wish they had gone to the other dentist.

Let us spend a little time instructing patients how to care for their teeth, and if we cannot spare the time, talk to them while operating, and they will catch part of our instructions, even if we are almost killing them.

It is the province of hygiene to seek out and determine the cause of disease and to formulate rules of prevention and cure.

I find that nitrate of silver is the best thing that I can use in very shallow cavities in the temporary teeth to preserve them and keep them in a healthy condition until they are shed.

Now a word to ourselves and the duties we owe our patrons. Do we pay a conscientious regard to cleanliness? Do we sterilize our instruments—our materials? Our patients have a right to the best service we can render under the most favorable conditions.

I shall not attempt to offer any suggestions; we all know how to keep

clean. Curtains and hangings too often form traps for dust and organic matter. Some men's clothing do the same. There was a so-called dentist in my office a short time ago, with tobacco juice dripping from his mouth, and his clothing was almost completely covered from his collar to his shoes with tobacco stain. That man did not know the meaning of hygiene, yet is always talking about prophylaxis. It is the duty of every man to keep clean, and nothing will aid him more in establishing a good practice than to keep his office neat, clean and attractive.

Practical Dentistry.

By T. P. HINMAN, D.D.S., Atlanta, Ga.

Read before the Georgia State Society at Lithia Springs, Ga., June, 1898.

Let me say in advance that all the methods here given are not claimed as original, but have been found greatly to my advantage, and, I hope, may prove beneficial to others.

Useful Hints in Operative Work.	A little soap on the dam about the holes will make it pass between crowded teeth with ease. Soap on the edge of a sandpaper or cuttlefish disk will prevent it from catching the dam.
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In the majority of cases it is not necessary to ligate dam in the anterior teeth, especially when the Perry separator is used. The pain of separation with the mechanical separator is not caused so much by the act of separation as by the laceration of the gum by the separator jaws passing too far up. This can be prevented by placing gutta percha under the arms and allowing it to rest on the teeth.

The Morgan Maxfield disk is a great time-saver.

To make thin rim disks at a moment's notice, place a disk on the mandril in the hand piece and revolve it rapidly, at the same time holding an instrument against the part nearest the mandril and gradually passing it outward to about one-eighth of an inch of the edge. This wears off the grit on the central surface of the disk, but leaves fresh grit on the rim.

A little wax on your engine belt will prevent it from slipping; a composition of beeswax and rosin is better.

To devitalize painlessly with arsenic, place a small pledget of the devitalizing agent on freshly exposed dentine as far from exposure as possible; then place on the exposed pulp a pledget of cotton saturated with equal parts of clove oil and carbolic acid. This should be dipped in a few crystals of cocaine just before passing into the cavity. Now seal lightly, and in 95 per cent. of cases thus treated the result will be good.

Varnishing sensitive cavities with gum mastic dissolved in chloroform will prevent pain from thermal changes, after the insertion of a metallic filling, provided the cavity does not extend too near the pulp; if so, varnish, line with cement and then place the metallic filling.

To secure perfect dryness without the dam, have napkins eight inches square of shirt bosom linen. Make rolls of cotton packed hard and place them over the saliva ducts; now roll the napkin into a long rope and place around the tooth. While holding in position with the fingers place a dam clamp over the tooth, which will hold the napkin in position and leave both hands free to operate.

Amalgam thoroughly triturated in a mortar works much easier and softer, and fully repays the operator for time spent mixing; besides, it makes a much more compact filling.

Teague's asbestos and tin cavity disks are excellent for capping nearly exposed pulps. They can be held in place by a little chloroform varnish. Then cement is lightly flowed over them. Besides being an excellent non-conductor, they prevent pressure.

The pain of excavating hypersensitive teeth can be greatly reduced by placing a pellet of cotton saturated in pure carbolic acid, then dipped in crystals of cocaine hydro-chlorate, in the cavity, and then blowing hot air on it for a few minutes. When the cotton is removed quite a layer of dentine will be found anesthetized, and if the operation is repeated the tooth can be excavated without pain.

A small eye tenotome lance is the best for an abscess.

Try saturated solution of silver nitrate in children's teeth, and when the cavities are fully blackened fill with sheet gutta percha, bridging over interproximal spaces.

A good root canal filling is made by dissolving sheet gutta percha in chloroform and then adding iodoform about one-sixth of its entire bulk. Its many advantages are apparent.

If metals of different potential be placed on the ends of wire which are in series with the milliampere meter and these metals be placed in the mouth and the saliva is acid, it will cause the generation of a galvanic current which will deflect the needle according to the amount of acid contained therein, or, if the saliva is neutral or alkaline there will be no deflection of the needle. The amount of deflection of the needle shows the degree of acidity of the saliva. If an acid mouth be washed with an alkaline solution, such as Philips' milk of magnesia, it immediately becomes neutral.

My tests in this line are as yet incomplete, but I am carrying on a course of experiments on which I will make further report.



New Jersey State Dental Association.

Twenty-Eighth Annual Meeting.

Discussion of Dr. Wilson's Paper.

It seems to me the writer of the paper fails to take into account a fact which ought to be very well known to us all, namely, that arsenic kills, to be sure, and that after a certain lapse of time the parts destroyed, the devitalized portions, separate themselves from the living. That is not done in twenty-four or forty-eight hours; I frequently find that separation taking place in eight or ten days. I find by leaving arsenic, whether it be applied to a cancer, or whether it be applied to a tooth pulp, sufficiently long, for the living portion to be entirely separated from the dead, that the dead portion may be removed without pain.

I think the purpose of the essayist is quite important and I was impressed by his paper. He did not, however, discriminate between applications made to an actually exposed pulp and one that was not actually exposed, but had become inflamed or irritated, so as to make necessary a certain application to the dentine between the cavity and the pulp, and he did not discriminate between the varying rates of absorption which would occur in different cases. It is well known to us that with applications made in different cases, the medicaments would be absorbed in a very different rate of rapidity. In olden times when arsenic used to be applied to cavities for the obtunding of sensitive dentine, to produce what is now so popular, painless dentistry, the success of such application in destroying the sensitiveness of the dentine was unquestioned, and it may also be unquestioned that certain portions of the pulp escaped destruction; but certain other portions were destroyed through a very large thickness of dentine when such applications were made even in very small cavities

and in those days dead pulps and alveolar abscesses were common instances of that kind of treatment. The statement which the essayist makes that arsenic should be applied more than once, very seldom, if at all, might be modified, it seems to me, to allow of discrimination between cases. I approve very heartily of the purpose of the essay, but I think that the dicta laid down are rather too imperative.

The question of the application of arsenic has been so widely discussed that I am surprised that the essayist has brought the subject down to the discussion of the apical portion of the cementum. I have become accustomed to using arsenic in the way that almost all of us use gasoline and dynamite—we do not think anything at all of it. If I make an application of arsenic and the patient asks me when he shall come to see me again, I say, "It is perfectly immaterial, but come if the tooth gives you trouble." I have been doing that for more than thirty years, and I have not seen any trouble come out of it yet. There is no trouble from it; arsenic is a harmless material if it is used rightly; it is not good for rats—but rats don't use it rightly. I have taught that from time immemorial, and I never make a second application of arsenic. When I say "never" you know that I mean the accepted "almost never!" I never make a second application to a lower tooth and I do not like to make a second application to an upper tooth, although once in a great while I do. But I do not care to discuss this second application of arsenic; there are so many better ways of devitalizing pulp. You are all familiar with the methods, and it is not necessary for me to do anything more than simply mention the fact.

But it is not fair for me to talk more about arsenic. As near as we can get at it, it would seem that about the one-millionth part of a grain of arsenic is taken up by the pulp, and that is sufficient for devitalization. But is it anything surprising that the pulp putrifies? The millionth part of a grain of arsenic is sufficient to destroy the pulp, but it is not enough to prevent putrefaction.

If you make an arsenical application and leave it in the tooth for months, or even for two or three years, according to the temperament of the individual, at the end of that time the pulp will usually become putrescent, and when you open the pulp cavity and take out the debris, what is the result? In five little minutes the tooth becomes perfectly quiet. Then you go on and complete your work in whatever way you deem best. Under such circumstances what is the use of my talking about the apical portion? I don't want to say one word against the essay, for it is a very nice paper, and if all had gone at matters of dentistry one-

quarter as earnestly, we would have done a great deal more for dentistry than we have in the last twenty years.

Our good old friend, Dr. Flagg, asked what is the use of discussing this subject of arsenic any further, we have made so much advance since twenty years ago. I want to say to you members of this Society, and visitors, that as long as elderly gentlemen like Dr. Flagg, whom we all respect, take the positive stand that he does on this question, it will be a subject for discussion. It is a dangerous thing to treat this subject as he does; there are men who do not know as much as he does.

Dr. Flagg. Oh!

Dr. Cuckey. There are many men who do not know as much as he does, and there are many young men who have had some painful experiences with this drug, arsenic. I have labored a little with Dr. Flagg; of course, that doesn't count for much, for Dr. Flagg is a positive character; what he knows he knows and tells every one else. But the way in which he treats this subject is always a painful matter. The danger from the use of arsenic in the interior of a tooth *per se*, so far as the arsenic itself goes, I do not believe is great. But before I go further I would like to ask Dr. Flagg this question: Is his preference, after he has made an application of arsenic to a tooth, to allow that tooth to go ten days, or to allow it to go three months, or three years? He has said he does not care which it is; but he must have a preference. Which would he prefer?

Dr. Flagg. Well, I must confess I would prefer ten days.

Dr. Cuckey. Thank you, Dr. Flagg; I am very glad to hear you say that.

Dr. Flagg. Would you like to know why I prefer ten days?

Dr. Cuckey. Yes, I would.

Dr. Flagg. It is because I would like to finish up the job and get my money!

Dr. Cuckey. Well, that is a very substantial reason. I do not believe that the trouble which ensues from the use of arsenic or any other drug, for the purpose of destroying the pulp, is due to the drug itself. It is due usually to the lapse of time during which it is left there. Dr. Flagg says that when the patient asks him when he shall come back he replies, "Come back when it is uncomfortable." That is very good reasoning; but my experience has been that the period of the uncomfortable arrives very much nearer the limit of ten days than the limit of three months or three years. The decomposition of the pulp sets in immediately, in nearly all cases, if not all. I have often opened a tooth and removed the pulp in less than ten

days, and found the gases of decomposition present. We have many times found the pulp thoroughly decomposed in from two to six months. Now, what about these cases of decomposition—do they cause the trouble or does the arsenic?

I think that the essayist has taken a most reasonable and a most conservative stand; I think his position is more in harmony with the experience of the majority of dentists in New Jersey than is the position that Dr. Flagg has taken. Whether or not the continued presence of arsenic in the pulp causes disease, or spreads itself to the pericemental membrane, is a question, I think, which has not been settled. In fact this whole question has not been settled. It comes very forcibly to my mind that we are on anything but a scientific basis. We have a friend in the West who says, and says most positively, that it is absolutely unnecessary to remove the pulp or any portion of it to save a devitalized tooth. He says, "Put in your balsamo del deserto, close it up, and there you are; there is no need of removing it; it is a waste of energy on the dentist's part, and a waste of money on the part of the patient." We come together and advocate, as the essayist does, the removal of the extreme part of that pulp and the most careful sterilizing and treatment and filling to save the tooth. Who is right? Who among us can judge and say positively who is right? We cannot say that the gentleman from the West does not know what he is talking about—that he is all wrong; and until this question is finally settled, until what is the scientific basis is established, I think it will always be a subject for discussion.

I want to say to Dr. Luckey that I know his ideas in regard to arsenic, and I think I know them just as well as he does. I think had I not taught as Dr. Flagg. I have for twenty years that arsenic could be left for months, with impunity, in a tooth, no one would *now* leave it in for a week or ten days.

Twenty-five years ago it was said that arsenic was to be taken out of a tooth in seven or eight hours; in extraordinary cases it might be left in for thirty-six hours, and in some very extraordinary cases it might be left in for forty-eight hours. My belief is that arsenic may be left indefinitely, for I believe the *arsenic itself* never gives any trouble, and that nobody ever suffered from arsenic closed up in a tooth; and I want to be put on record as saying that I have treated thousands of cases, and that I never had one to do badly. The *application* of arsenic is a thing which I want to be distinct about tonight; I believe it to be more important than the apical foramen, or the cementum, or anything else. It was suggested by my friend here a little while ago, "Why, suppose there is a cavity in a lower molar and the cavity is near enough to the gum, and you make an arsenical application as carefully as you please, and a small

portion of it squeezes out and gets on the gum?" I want to ask you if *that* is the subject we are discussing, putting arsenic in a cavity and squeezing it out on the gum? I don't teach that way; I teach never to use it in that manner. If you are going to devitalize that pulp, make an application in the cavity which will *soothe the pulp*, and commence to drill on the mesio-buccal face of that tooth and then make your application into the drill pit. Don't make the arsenical application where there is danger of its coming out. *The first principle is to know how to make it.* Having drilled in a certain distance, you come to sensitive dentine, don't wait, for has it not been taught for years that arsenic is a splendid material to obtund sensitive dentine?—so place your arsenic in the sensitive dentine, and then go on until you make another application of arsenic. There you make double, and perhaps treble, applications. You drill in a certain distance and make your application, and what do you cover it with? Sandarach cotton? There are but three things to cover it with. There is "temporary stopping" in its proper place, and I can hardly recognize anything better in a drill pit or pocket. It is practically non-leaking; it would never wear out there. In another case you would make your covering with zinc phosphate or with "facing" amalgam, both of which are absolutely non-leaking. If the patient were going to Europe to spend the Summer I should cover it with "facing" amalgam. I think it would last perfectly for the two, three or four months the patient would be away. If the patient were coming back in a month or so I should cover it with zinc phosphate, for I should recognize it would last perfectly well for three or four weeks in almost any place, and this has been my practice for I don't know how many years. There are lots of the young men here who had that teaching, and who have practiced in that way for ten or fifteen years.

I would say these are the things to know about, and that under these circumstances I do not believe this subject need be very much more discussed, particularly as we are using arsenic, comparatively speaking, so little nowadays.



Discussion of Dr. Waas's Paper.

Dr. Luckey. Dr. Waas, will you have the kindness to describe how and under what conditions you use your mixture?

Dr. Waas. With pleasure. We will take, for instance, a lower bicuspid tooth, and we will say there is a cavity in the masticating surface. The pulp is exposed, and we put in our application of arsenic to devitalize it. We make sure the pulp is dead, and then we put a large round bur in the dental engine, if it is a hard tooth, and if it is a soft tooth we use a large blunt excavator and clear the cavity out, and remove the portion of the pulp that is exposed. We then thoroughly desiccate the tooth with hot air and make the application for the mummification, pressing it down into the remains of the pulp. Dr. Sorderborg says that if you wish to you can pick that pulp open a little and allow the mummification paste to go to the end; but that is not necessary. I have never done it. After we have the mummification paste in and pressed down into the pulp, we put over that a layer of oxy-phosphate cement, and fill the cavity proper with any material that we may be disposed to use.

Dr. Bogue. You say you must make sure the pulp is dead; but suppose the pulp is not dead?

Dr. Waas. If you have any reason to believe the pulp is not dead, make another application of arsenic.

Dr. Bogue. What would the result be if it is not dead?

Dr. Waas. I could not tell you what the result would be if the pulp were not dead, because I am reasonably sure that in every tooth I have ever treated in this way the pulp has been dead.

Dr. Luckey. Have you ever opened or seen opened any tooth that has been subjected to this treatment?

Dr. Waas. I have never seen such a tooth—there was never any occasion for extracting a tooth I had treated in this way.

Dr. Luckey. Do you know what is the condition of the pulp canal?—how nearly the mummified pulp fills the canal, whether completely or not?

Dr. Waas. Dr. Sorderborg says that he has split teeth that have been so treated; I believe he says he has extracted teeth in which the pulp had been mummified as little as two weeks, and the mummification has been thorough to the

end of the root. But I have never extracted such a tooth and I cannot tell what the condition would be. The only thing I can tell you is my experience with this mode of treatment—that I have never had any trouble in any way.

Dr. Bogue. Do you treat putrescent pulp canals in the same way?

Dr. Waas. No, I am speaking of pulps that come to us alive, and which we kill. I would think no more of treating a putrescent pulp in that way than where, for instance, there is no cavity.

Dr. Watkins. You simply remove that portion that is in the large pulp chamber?

Dr. Waas. Yes, simply enough to be sure my pulp is dead.

Dr. Luckey. The doctrine laid down by the essayist is one that is very enticing, and one that opens up to us a great deal of ease, comfort and emolument, but it is almost too good to believe. I hope he is right. I don't know anything about pulp mummification. I have not tried it, but my interpretation of the word "mummification" would be that of drying up, and if that is so, what about the space between the walls of the pulp canal and the mummified matter, which we have always been taught to believe was a source of great trouble if not filled with some inert substance? I cannot answer this question; I ask for information which I probably will not get to-night, as the gentleman himself has not opened any of these teeth and does not know what would happen in such a case. I do not question him or his experience at all, nor his honesty; but it does seem probable that this course of procedure is a reasonable one. If it is reasonable, then we have all been doing something which is utterly unreasonable.

Dr. Waas. The only object I had in reading the paper was to give my experience with this mode of treatment, and if I should ever come across one case in which the result is different I will immediately send word to Dr. Meeker; and if I should not be here at the following meeting of the Society I ask him to read the letter in open meeting. If a tooth should give such trouble as to make it necessary to extract it, I will certainly send the tooth.

Dr. Osmun. How long has this treatment been in operation; from the very beginning?

Dr. Waas. In Dr. Sorderborg's paper he sets forth that he has been using it, I think, about one year prior to the time when he wrote the article that was published in the *Dental Cosmos*. That would be about four years, I should judge.

The essay was very gratifying and pleasing to listen to, but I have some skepticism about new things. There was a time when I had not so much skepticism, but, you know, a child who picks up a black and harmless piece of iron sometimes finds it pretty warm, and he learns to dread that sort of thing after awhile. I have picked up a few of such pieces of iron in my life, and I always look and investigate now to find out whether there is any heat radiating from it before I pick it up. That is the way I feel with reference to this new treatment. I should like to hear another paper from this gentleman after he has tried and watched this treatment about four or five years longer, and then if he could bring us a report like unto this, I think I should be tempted to embrace his methods.

In reference to taking out pulps and filling up solid, I think that we theorize a great deal about such things and we forget that we have not a theory confronting us, but a condition, and that idiosyncracies and peculiarities of temperament are factors which we must not lose sight of; so, too, is the condition of the general health and the environments in which the patient is placed; all these things are very important in determining the success or failure of any root filling, and in the treatment of devitalized teeth and abscessed teeth. While we come here and tell about successes and failures, we must not forget this one point—that no two cases are alike. We get no two results alike from our own treatment and various vital functions or forces—you may call them what you please—enter into the operation which no human being can foresee or foretell. I have taken out many teeth and opened them; I always open any pulpless or diseased teeth first to see what the root was filled with, then to see how thoroughly the work was done, and if possible to learn the cause of the failure, and I have seen some of the worst filled roots, that have lasted for years and have been taken out not because they were abscessed, but for other reasons; and then I have taken out other teeth that have been most beautifully filled; so far as the human eye could see there was not a crevice or deficiency in any part of the work from beginning to end, and yet they have been failures simply because the environment of that patient was such that the vital forces were below par, and there has been set up some irritating cause which nobody could foresee or foretell, and the result has been a failure.

The only point I wish to bring out and emphasize is this—that we must not condemn the operator when we come across a failure and think that he has been careless in his antiseptic treatment, careless in removing all particles of pulp tissue, or careless in the insertion of the filling, for there are other causes of failure which are sometimes beyond the limits of human skill to control.

I wish to congratulate Dr. Waas for two reasons. One of those is that he is a new member, was asked by the Essay Committee to read a paper this year, and has done so. The other reason is that he has probably more courage than any other member of this society, for he has proceeded quite differently from the acknowledged treatment, and now gives us the results, so that we can find out for ourselves without jeopardizing our own practice, for, really, I would not have dared to do it. I say that openly. If next year Dr. Waas will come before us and give us some more of his experience we may discover still more of the benefits that may result from this practice.

About 1895 I read the paper to which the essayist has referred. Soon after I had a badly disordered wisdom tooth to treat, in which I tried to take out the pulp, but without success. I devitalized the pulp, opened the tooth and treated the pulp chamber with the mummifying application. To my knowledge that tooth has been in use for three years since that time. I have mentioned the fact of making that application to several of my professional brethren, and since that time I have used it in probably fifty cases, and so far I have not had a failure or any unfavorable symptoms from any of those teeth. One case in particular which gave me a great deal of satisfaction (whether it will in the future remains to be seen), was that of a gentleman who presented himself with his teeth worn perfectly flat, and all along the edges were cavities showing exposed pulp. I drilled in on these teeth, devitalizing the pulps one at a time, and filled the pulp chamber with the mummifying application. This was a year and a half ago, and the patient, who is a clergyman, has had perfect comfort every since.

I have had a certain amount of hesitancy in acknowledging my use of this application, feeling that to a certain extent it might be thought to be unprofessional, and I have gone on taking out pulps, but where I get one which it is impossible to remove I have put in this application, and, as I have said, so far I have seen no trouble whatever from it.

I should like to ask if Dr. Fish or Dr. Waas removes a part of the pulp? Supposing there was a lower molar with two ordinary canals and one little extra root running off to the side, which would have a very small canal, almost like a hair, would they remove the pulp from those two ordinary canals, and then after filling those canals apply this remedy to the little one of they suspected it?

I would also like to ask them how the color of the teeth remains

after being treated in this way—if they retain their proper color, or if they turn dark?

Dr. Waas.

In answer to the last question I would state that I have, as I said in the paper, never detected any discoloration. The zinc oxide is the medication which prevents discoloration.

So far as removing the pulps in two of the roots and filling them and suspecting a third root, which I could not get in—I would have no hesitancy whatever in putting the application in.

About a year ago I was speaking of the process of mummification to a gentleman connected with one of the colleges in Philadelphia, and he promised he would give it a trial. "But don't say anything," said he. I met the gentleman about three months ago, and he told me he had mummified about a dozen cases, and he has not met with any unpleasant results.

Dr. Bogue.

The essayist will, I am sure, pardon me if, while congratulating him on bringing forward a subject which has claimed attention for the past three years, I remind him of a little incident which occurred under my own eyes a few years ago. One of our most distinguished members had arranged to spend a few years on the other side of the water, but found he could not converse as readily as he could at home, so came back. He was a man of marked professional ability, and after he came back he called upon me and I showed him a tooth I had been working on and said to him, "What would you do with that?" "Cut it right down and put on a crown." "How long will it last?" "Forever." "How do you know?" "Because I never had one fail." "How long have you been doing it?" "About three years." That is all.

**Abscesses
Resulting from
Mummified Pulps.**

I have had the honor of following in the wake of a certain gentleman who has passed to the other side, whom you all knew by name—Dr. Magitot. He has written more books on dentistry and more scientific books on that subject than any other man in France. Dr. Magitot for years used arsenic to obtund sensitive dentine in teeth. When the obtunding was completed he excavated and filled the tooth. Sometimes, as he told me himself, he reached the pulp and knew it was destroyed, but, all the same, he would rely on the mummification of the pulp. Dr. Magitot's treatment was followed years later by abscesses innumerable. I could not tell you how many French and American dentists have told me the story that I now state from my own personal knowledge. These abscesses did not come in one, two or perhaps three years, but they came, and

they came when the supposedly mummified pulps had failed through lapse of time, those pulps being in warm moist mouths year after year. There is no remedy known to chemistry that will, under such circumstances, make a mummy that will remain a mummy. Put that mummy under the pyramids of Egypt, in that dry atmosphere, and it will remain a mummy; but the pulp of a tooth in the mouth does not act that way.

Another piece of personal experience—I went to Bremen and there I watched Dr. Herbst in his office day after day, with the interest you may all imagine; and I have been with Dr. Herbst often, after he had supposedly mummified the pulps, to the houses of his patients, patient after patient, to treat abscesses, and he did not know what to do with them.

In 1873 or '74 I received a letter from Mr. C. Spence Bate, M. R. S., who had been appointed by the Government of Great Britain as one of the naturalists to examine the find of the English scientific steamer "Challenger," in a voyage around the globe. He told me that the way they kept their findings of fish during the two years of their absence was by placing them in glycerine, of which they had a barrel always open and ready, letting them hang there a few minutes, taking them out, letting them drain and laying them on shelves, and that was all that was done. We all know how quickly fish will spoil, but he told me that after the lapse of two years he found those fish that he examined to all appearances and to all intents and purposes for his examination, still fresh.

It was about that time that the S. S. White Company got out glycerine with thymol, and, recognizing the fact which the essayist has brought out before us so forcibly—that I was not able to get pulps entirely out, and something must be done with that portion of the pulp which remained—after getting out all that I could I began to use glycerine-thymol, hoping to mummify the little remains at the ends of the roots, thinking that if it lasted on the "Challenger" for two years it might last in the tooth for some little time. I have been perhaps as much gratified as Dr. Fish that these remnants of the pulp have not given trouble. But, in view of the facts which I have already narrated—that Dr. Magitot and Dr. Herbst, and all our predecessors in America, back in the literature of dentistry have had abscesses following them as the sequence of leaving pulp in the root canals, I have feared the result of that treatment.

There is a material, of which I regret to say I cannot give the constituents, called *vinaigre de penese*, with which I have mummified beef-steak, and kept it in my office for three years. Indeed, there are a dozen antiseptics which will do that perfectly well. One of the most applicable to our use is chloride of zinc. Dr. Harlan, of Chicago, had advocated, as you all know, oil of cinnamon; but I would warn you against its use

in front teeth, owing to its tendency to cause discoloration to such an extent that it sometimes makes a very unpleasant appearance, and I know of no way of getting rid of it.

I speak of these things because I have positive knowledge of them. For the rest I owe my thanks to the essayist, with you, and I hope that at some future time, not forgetting the experiences that have gone before with him, he will give us the benefit of the experiences that are to come.

One thing the essayist seems to have lost sight of, and that is the fact that there are other openings to the pulp chamber in all cases, through which there is a constant exudation of fluid, and that is the vulnerable point at which the inflammation occurs. I do not see any way by which you can mummify pulp, or treat pulp by any means by an application from an external point, and make a permanent success if you do not seal the apical foramen.

Dr. Leroy. I would like to ask my friend from New York what preparation Dr. Herbst used in mummifying his pulps?

Dr. Bogue. All that can be ascertained from the writings published by the *Cosmos*. But, to answer off-hand, I would say that he advocated cobalt; he never mentions the fact that the active principle of cobalt is arsenic.

I brought that question up simply to show that
Dr. Waas. Dr. Herbst did not use the same preparation as Dr. Sorderborg. Dr. Sorderborg gives the preparation that Dr. Herbst used, and says he discarded it and used a different preparation altogether.



Georgia State Dental Society.

30th Annual Meeting Held at Sweetwater Park Hotel, June 7th-10th, 1898.

The meeting was called to order by the President, Dr. H. D. Wilson, who occupied the chair, at 12 o'clock.

Prayer, by Dr. R. B. Hill.

Dr. W. A. Summerlain, the Chairman, being the only member of the Executive Committee present, the President appointed on that committee Drs. R. B. Adair and C. V. Rosser.

The reading of the President's address was postponed until the afternoon session, when it was read and referred to a committee including Drs. Chapple, Hinman and Weaver. Dr. R. B. Adair read a paper entitled "Plastic Fillings."

Discussion of Dr. Adair's Paper.

Dr. Rosser. Mr. President, this Doyle preparation can easily be dissolved.

Dr. Hinman. It is nothing but cellulose, Mr. President, and is readily dissolved with chloroform and camphor.

Dr. Adair. I know nothing of its composition. I have applied different acids to it, without affecting it, but have tried nothing else. Dr. Doyle told me he had been wearing a plate made from it for the last five years, and that it is in good condition.

Dr. Hinman. Dr. Doyle told me he had worn that plate for one year. His statement to Dr. Rosser was that he had worn it ten or twelve years, and it is in bad condition—not good. I do not wish to be offensive, but I would like to ask Dr. Adair one or two questions regarding this man Doyle. He has told so many conflicting stories in Atlanta that he must be pronounced a quack, and he is trying to palm off on the profession something which will injure the tissues of the mouth. This composition of his has been tested and found to be nothing more than cellulose, made from the fiber of plants, a substance which will decompose, disintegrate, when worn in the mouth and become offensive. It shrinks 40 per cent. Think of this, and imagine the result if a crown were set with it.

I must confess that I am disappointed. When I first heard the title of Dr. Adair's paper read I hoped that before the discussion following it was ended we should find that someone had discovered the ideal filling material—something which would neither shrink nor expand, and upon which the acids of the mouth would have no effect. I think the question should be followed up until the desired end is reached.

I do not care to discuss the paper extensively, but I am interested in any matter brought up before this society, and though not agreeing with you, I think this one of the most important subjects in all the field of dental surgery. If I know anything in the world about my profession, I know it is entitled to respect, and I do not believe that, as far as the filling of teeth with amalgam goes, it is entitled to respect. I know I can practice dentistry with better advantage to myself and to my patients without it than with it. There seems to be something peculiar about this amalgam craze, this idea that amalgam is a great benefaction. It is a

**Amalgam
Condemned.** most stubborn and obstinate question. It is like Banquo's ghost, that will not down. In my career I have lived to see some other fallacies in dental surgery give way, but this, unfortunately, survives. One of the first things I ever said on the floor of a dental convention, about twenty-seven years ago, was in opposition to the use of amalgam for filling teeth. My argument was that it was an injury to the profession and an injury to the public. A little further along another topic came up. I advocated crown and bridge work, and some of my friends will remember the opposition to it. I said it was calculated to do more for dental surgery than anything else. In one town in Alabama they said I ought to be ridden out of town on a rail. It was the old condition of hidebound conservatism. I wanted to demonstrate that, with proper abutments, a bridge of sixteen teeth could be worn in the upper jaw with more comfort and advantage to the patient than an ordinary plate. They thought I had gone crazy. Today the more intelligent part of the profession will sustain me in that dogmatic statement. And yet some of these very men still advocate the filling of teeth with amalgam. There is a reason for this phenomenon. I would not impute to any individual member of my profession improper motives, but I am forced to the conclusion that this fallacy is kept alive by mercenary motives. One-half of the public thinks it is cheaper to have teeth filled with amalgam than with gold, but in his inner consciousness the dentist knows better—if he does his duty properly. I tell you, Mr. Chairman and gentlemen, the time is coming when the people will awake on this subject; when they will distinguish between

improper dentistry and good dentistry; when they will realize that a five-dollar gold filling is cheaper than a \$2 amalgam filling, and if they find a man who advocates the use of amalgam and cannot manipulate gold, they will leave him and go to one who can. I say that amalgam cannot and does not preserve tooth structure as gold does, notwithstanding the pronouncement of Foster Flagg to the contrary, and by that statement he is responsible for many an edentulous jaw and the vitiated moral sense resulting therefrom. A great deal is said about the ingredients of amalgam—silver, tin, a little copper, bismuth, and the Lord knows what else, and every man comes along to demonstrate the utility of his own amalgam and tell you what he can do. Mr. Chairman, I challenge any dental society in this country to appoint a committee of three competent men to examine amalgam fillings—remove them from teeth in which they have been placed for any length of time, and report that the teeth are in proper condition. I tell you this thing of amalgam is hurtful to our profession and to the human family. It is a snare and a delusion and has been from the time it was first used until now. The human family is worse off than if it had never been used in the mouth. The presence of amalgam is injurious to the teeth, and in the teeth of the young it is not only hurtful to the teeth themselves, but also to the tissues of the mouth. There is an erroneous notion common that when the teeth first erupt they are as large as they ever become. This is a mistake. To fill these teeth with amalgam, these baby teeth, is to invite their decay; whereas, if they were filled with gold, they could be preserved for years and perhaps crowned in later life. Amalgam interferes with the physiological development of the roots of these baby teeth.

The more I look at this matter of amalgam, the more inclined I am to condemn it. I for one will lose a patient before I will use it. Within the last twenty or thirty years I have perhaps put in twenty or thirty amalgam fillings. About two months ago a patient came to me and insisted that I put an amalgam filling in the posterior surface of a molar. At last I scooped out the cavity and jabbed in some amalgam.

Mr. President, before I die I hope to see my profession right on this subject, and believe I shall.

These extremists are demoralizing, Mr. President. Dr. Crawford is demoralizing as an advocate of gold, and Dr. Flagg as an advocate of amalgam.

Perhaps but a small minority of the dentists of this country can put in a first-class contour gold filling, while the majority of them can put in good amalgam fillings. Therefore, according to Dr. Crawford, only the small minority should be allowed to practice dentistry. He should be conservative and treat amalgam with the respect which is its due.

Dr. Rosser. I would like to ask Dr. Crawford how he would fill a cavity in a wisdom tooth, buccal surface, extending below the gum margin?

Dr. Crawford. It should be filled with gold foil. I would employ the rubber dam, then put in non-cohesive and cohesive gold. You could plug it with Abbey's gold foil as well as any man in the world.

Dr. Rosser. I do not agree with the essayist in a good deal he has said. Neither do I agree with Dr. Crawford. I am not surprised that Dr. Crawford abandoned the use of amalgam if he was in the habit of using it as he said he did in that molar tooth just now. If I were to "scoop out cavities and jab in amalgam" I would have had a sufficient number of failures to have caused me to abandon it, too.

**Amalgam
Defended.** I am not one that uses a large quantity of amalgam, but I believe that in some cases a tooth can be preserved longer with amalgam than with any other material. You may take some teeth that are badly broken down, fill them with amalgam and save them for years, and then when that has failed you place a crown on the remaining portion that will last perhaps as long or longer. All or most of us have perhaps seen such cases. Amalgam is only objectionable when injudiciously used—when both the cavity and the amalgam are improperly prepared. Dr. Crawford seems to think that because some amalgam fillings fail it should be abandoned. The same argument would hold good in regard to gold. I do not wish to leave you under the impression that I am a great advocate of the use of amalgam or that I employ a great deal of it in my practice, for neither would be true, but I contend that in its legitimate place it is a good tooth preserver. The objection to it arises from the fact that so many others use it as Dr. Crawford does, and of course this "scooping" and "jabbing" method cannot be too highly condemned. We should use amalgam judiciously—only in such cases as we know require it. When I first began to practice dentistry I used more amalgam than I do now, partly because I had not the skill in many cases to properly handle gold and partly because my patients could not pay for gold fillings. Now I place gold wherever I can possibly use it. We hear of dentists occasionally who advocate the use of gold to the exclusion of amalgam in theory, but who in practice make use of a good deal of the latter material. I wish to say, in regard to Dr. Crawford, that this is not the case. A gentleman came into my office a few days ago and in the course of conversation said Dr. Crawford was the only man he ever saw who would lose a patient rather than fill his teeth with amalgam.

I do not care to say anything about the merits and demerits of amalgam; the subject has been discussed so much. Those who pretend to keep up with the literature of the day know that some of the best men use it and that some of the best men do not. I simply wish to add my testimony to that of Dr. Crawford relative to its injurious effects upon children's teeth. Some thirteen or fourteen years ago Dr. Crawford looked into the mouth of my little boy, and, seeing some amalgam fillings which I had placed in his posterior teeth, said: "I want you to notice the effect of amalgam upon these teeth. Those which have been filled with amalgam will not shed as soon as the others." This proved to be true, and since that time I have not filled the teeth of children with amalgam, knowing it retards the absorption of the roots.

Dr. Crawford, allow me to ask you a question.

Dr. F. D. Wilson. You say that amalgam preserves the temporary teeth of children, and yet you claim that the permanent teeth are injured by it. How do you explain this?

My principal objection to amalgam fillings is that they leak. I do not think that the leaking necessarily depends upon expansion or contraction, but I am inclined to think that it is due to the tendency of amalgam to become spheroidal and thus change its shape. That answers the question from one standpoint. I think the interference by amalgam with the absorption of the roots of the baby teeth is a pathological condition, thus differing from the natural hardening of the teeth, which is a physiological process. This pathological condition is, perhaps, caused by the mercury which the amalgam contains. The change does not run *pari passu*. Why? It has a specific work to do and does it in a specific time. I have had men come into my office with specimen teeth in their fingers—baby molars—that they had filled at three or four years of age. We all know the roots are not absorbed at that time. I can go into my laboratory and find teeth that have been thus extracted. Unusual cases, I know, do not prove the rule. I have not claimed that this was true in all cases, but I have contended that the filling of temporary teeth with amalgam interferes with the absorption of their roots.

Now, again, another objection of mine to amalgam is that it is productive of pulpstone, one of the most annoying things a dentist has to contend with. After long observation and careful study, I am well satisfied that this is true. There is no doubt but that all metals employed in filling teeth are more or less responsible for the production of pulpstones, but it is especially true of amalgam.

Amalgam is also a fruitful cause of neuralgia. Gentlemen, it should never have been used. There is nothing which has been done with amalgam that could not have been done better with something else.

Those who know Dr. Crawford, know how to take him. He is a prophet. He prophesies about the weather, and he wishes his prophecy to come to pass. And so about amalgam—for years he has prophesied that the day would come when it would not be used by dentists, and he wants this prophecy to come to pass. We are always glad to have him with us. He makes a convention lively; he brings out good points, and we are all interested in good points. But seriously, gentlemen, we all know that amalgam is one of the best tooth preservers known. In this country to-day there are a greater number of men who can put in good amalgam fillings than there are who can put in good gold fillings. I am not such a strong advocate of amalgam, though I made some points in my paper in favor of it. The success of amalgam depends, of course, on the manner of working the material. I believe it is good practice to fill all the posterior teeth, from the second bicuspid back, with amalgam. I do not believe it is a good idea to disturb an amalgam filling until it has thoroughly crystallized. But I believe that amalgam will save teeth if properly inserted, given sufficient time to crystallize and then polished.

Another point, in regard to cements. Every dentist who reads up can see that cement is very pernicious if placed near a pulp. If this is done the death of that organ will result. Therefore, I think it very injurious, and I never place it in sensitive teeth now without first lining the cavities with something else.

Dr. Crawford made a statement in regard to pulp nodules. I have found more of them under cement fillings than anywhere else, and I cannot help believing it was due to the presence of the cement. I have not had time to investigate this cement of Dr. Doyle's. I brought it here at his request; I have no object except to benefit the profession. If it is a good thing I want to use it, no matter whether he is a quack or not. It struck me as a good thing. I do not know anything about Dr. Doyle at all.

Discussion of Dr. Mixon's Paper.

There are a good many points in Dr. Mixon's paper worthy of consideration, but one in particular. I have frequently thought the toothbrush has done more harm than good. It seems a broad assertion to make, but at times I have thought so. In the first place, the object in using the toothbrush

is to cleanse the teeth, but we all know that it is not always accomplished; they fail to remove the food particles from between the teeth. This can be more thoroughly done with floss silk, and I frequently tell my patients that, if they discard one or the other, to discard the brush and retain the floss silk. I find that, as a rule, toothbrushes are too stiff. A perfectly soft brush should be used. If the brushes are hard they are likely to injure the gums. I am not prepared to say this is a cause of recession of the gums, but I think that in many cases stiff brushes are responsible for this condition. I do not think that, as a profession, we pay enough attention to prophylaxis; we are too indifferent on this subject. The teeth cannot be kept clean by using a prophylactic mouthwash unless it is strong enough to injure the soft tissues of the mouth. In my opinion the best method is to use a good, safe, antiseptic mouthwash, and a soft toothbrush and floss silk.

Dr. Crawford.

I do not wish to take up your time, but I am pleased with the paper and wish to make my contribution. I guarantee that the use of the toothbrush does more harm than good. The toothbrush should be used, but used intelligently. There are some things which we know, but we know them from a highly philosophical standpoint. We have on the statute books in our cities a law making it unlawful to sell liquor on Sunday, and yet we all know that the law is broken as often as the day dawns. Now, from a philosophical standpoint I know it is more hurtful than beneficial to use the toothbrush. Mr. Chairman and gentlemen, there is the best dentrifice in the world (indicating a tumbler of water). That beats them all. Now, do you know that not ten per cent. of the population can even wash pumice stone out of the mouth with water. Again, one of the easiest things to wash out of the mouth is fresh, flowing blood; not ten per cent. can do that. They so contract the muscles of their mouths that the attempt is almost futile. A person should be able to empty a tumbler filled two-thirds full of water in two attempts by properly ballooning the mouth and evacuating it thoroughly. Not twenty-five per cent. of people can properly gargle their throats. What is the result? The mouth becomes vitiated, the back portion shows dead teeth and the tonsils are enlarged. Teach your patients to fill up their mouths with water, gentlemen; fill them up (suiting the action to the words amidst laughter), and you have made a long stride in the right direction. I think I have originated a good many things in my office, and few of them, I believe, have done more good than this.

The essayist advocates the use of a napkin also. My observation is that napkins do more harm than good. They pack the food between the teeth, the most vulnerable place for decay. Whether you clean the teeth

with powder, soap or paste, don't forget the water. Thoroughly rinse out the mouth with water after every meal, or whenever food has been taken. The best time to brush the teeth is just before retiring. Take everything out of the mouth and clean perfectly.

Artificial Teeth This brings up a little matter of prophylaxis and hygiene which has not been emphasized. I believe
Worn at Night. there is actually a majority of people who think an artificial plate should be taken out of the mouth

every night. I undertake to say that nobody can get the full benefit of an artificial plate who does this. Plates should be kept in the mouth at night, but they should be clean and nice, in which case they would be a protection, comfort and benefit to the parts. A person will come to you and say: "Here is a plate I have worn for twenty years and never have broken it." Not knowing any better, he or she has removed it from the mouth every night, and thus been deprived of the full benefit of it. Encourage young people in the use of the water bath for the teeth. Sometimes, in the case of enlarged tonsils, alcoholic tincture of iodine is beneficial. A good deal has been said about the prophylactic toothbrush, hard and soft toothbrushes, etc., but in my opinion the bigger the brush the better. Carry the brush over the ends of the teeth, give it a whirling, learn to use it as a pick, throwing out the particles of food. In some cases use floss silk.

Discussion of Dr. Hinman's Paper.

I would like to ask Dr. Hinman on what microscopic authority he bases his statement that there are fibres in the dentinal tubuli. I have not been able to find them, and neither has Dr. Williams, of London.

Dr. Colson. I cannot quote you my authority just at this moment, but will secure it for you on my return home.

Dr. Finman. I am glad to have heard the paper, Mr. Chairman, but Dr. Hinman has mentioned some things in his paper that I do not quite like. I don't like gutta-

Dr. Crawford. percha. Next to amalgam, gutta-percha is the meanest thing that can be put in the mouth, particularly when you undertake to bridge from one tooth to another. Dr. Hinman, you cannot afford to violate nature's laws, and this is an absolute violation of those laws. You do away with the natural articulation of the teeth.

Now, that point of napkins to keep the mouth dry is a good point. We should do away, as much as possible, with the ligation of rubber-dam

in place around the necks of the teeth, for it often results in recession of the gums—pyorrhoea alveolaris—and it takes an expert like my friend Adair to cure it; and a genuine, all-round, complicated case of pyorrhoea alveolaris is a hard thing to cure.

About the use of nitrate of silver, one of the leading dentists of Philadelphia says nitrate of silver in children's teeth is the best. If necessary he opens into the cavity, cuts away the jagged edges with a chisel, sand-paper or corundum disks, washes out the cavity, and then cuts up little pieces of blotting-paper of various sizes, moistens one of these tiny pieces of blotting-paper, applies to it the nitrate of silver, and places it in the cavity, and repeats this as often as necessary until the cavity is thoroughly sterilized. Some dentists have advocated the removal of a large portion of the decay. This is objectionable, particularly where the decay is advanced. The danger of treating decay in children's teeth is injury to the pulp. One of the most imperative duties demanded of a dentist is to preserve the vitality of the pulps of teeth, and every time he uses nitrate of silver he injures the pulp. This is one of the objections that has occurred to my mind in the use of nitrate of silver. It not only affects the dentine, but also injures the pulp. I do not think there is anything worse that a dentist can do than to devitalize the pulps of children's teeth before they erupt their sixth-year molars. One thing worse is their unnecessary extraction.

I like (?) the painstaking manner in which the gentleman brought amalgam into his paper, thus lending his influence in murdering the beauty of the profession.

**Carbolic Acid
for Removing Pulp.**

In regard to the treatment of exposed pulps, I hope to be able to exhibit the best means possible to get rid of exposed pulps in a clinic before this convention. I have tried cataphoresis; I have tried arsenic; I have tried cocaine; and I believe the best method is to put on the rubber-dam, the napkin or some other means by which the mouth can be kept dry; then clean out the tooth, get an actual exposure of the pulp, and sterilize the mouth. I prefer chloride of mercury for this purpose, although I have used formaldehyde and other agents. Dry the cavity, expose the pulp, take a pellet of cotton in the pliers and moisten it in pure carbolic acid, crystal form. The first application anaesthetizes the pulp, frequent applications devitalize it. If, in removing the pulp, it is found to be sensitive, apply pure carbolic acid again on cotton. If there is hemorrhage, stop it with a little bichloride of mercury on cotton; it is the best thing in the world to stop hemorrhage. In case of profuse hemorrhage, apply larger pieces of carbolic acid crystals, and in nine cases out of ten you can

anaesthetize and devitalize the pulp thoroughly. Make your opening into the pulp with a large round bur, carry the carbolic acid to place, and stop up the cavity with wax, using sufficient pressure to gradually fill up the cavity. Carbolic acid is more prone to cause abscess than any other medicament we use, but this can be avoided by caulking up these roots. After devitalizing and removing the pulp, proceed to remove the contents of the root-canal with a flexible broach. When this is properly done, you will have the roots of those teeth in the best possible surgical condition. I also rely very largely, in avoiding trouble in the buccal roots, upon caulking or damming them up with the sterilized contents of the canals themselves. I take a fine broach and readily go up into those tiny canals. Sterilized animal ligatures are said to be the most safe. Why can't we use the sterilized contents of the canals in caulking up these root-canals. I lay more stress upon this procedure in treating the buccal canals of the posterior teeth than upon the treatment of the remaining canals.

I wish to ask Dr. Crawford one question. In describing his method of extirpating and removing the pulp, he speaks of using pressure and of employing a large round bur in opening into the pulp-chamber. Now, necessarily pressure produces pain; so also would a large bur of any kind—the larger the instrument the greater the pain, of course, and this would be true even after using carbolic acid. This I do not understand, and would like to ask Dr. Crawford how he does this without pain to the patient.

Dr. Crawford. I said that if pain results after I begin to remove the pulp I stop and reinject carbolic acid.

Dr. Holland. Carbolic acid will not be thoroughly absorbed within less than three hours' time.

Dr. Crawford. I did not say that I did not cause a particle of pain; there is a minimum of pain, but no more than is caused by forcing a pledget of cotton into a cavity with an exposed pulp.

Dr. Holland. What about using a large bur?

Dr. Crawford. I am in the habit of using a large bur, as it accomplishes the desired purpose more rapidly, and, I believe, with little if any more pain than a small one.

Dr. H. H. Johnson. Mr. President, I did not intend to say anything on this subject, but have become interested, and thought I would say a few words in regard to Dr. Crawford's method of treating pulps with carbolic acid. If I wish to

anaesthetize the pulps of teeth I always prefer cocaine crystals. I have frequently taken out pulps in that way. In case of partial exposure and where it is difficult to obtain a full exposure, and by forcing in a little at a time I soon succeed in penetrating clear to the apex with little or no pain. I do not know about the molars, but in the anterior teeth where I can get to them I take out the pulps in that way, and it can be done thoroughly without pain.

In regard to the method of applying nitrate of silver, alluded to by Dr. Crawford, his method is very good and very effectual. A good way of applying nitrate of silver is by means of a copper wire, with which it can be placed just where it is wanted.

I agree with Dr. Hinman in most of the points made in his paper. It is an able one, and I am glad to have had the pleasure of listening to it.

Pulp Capping—

Dr. Adair.

Mr. President, I am surprised at Dr. Crawford; I am astonished to hear him get up here and make this talk. He has heretofore agreed with me in capping pulps, and I cannot allow such assertions to be made without getting up and saying something. I think it is bad practice to kill live pulps. Living teeth are better than dead ones.

Dr. Crawford.

Mr. Chairman, I would like to ask Dr. Adair a question. Do you never kill pulps?

Dr. Adair.

No, sir.

Dr. Crawford.

Take this case: Suppose a patient fifteen or twenty years of age should call on you with an aching tooth. Upon examination you find a cavity in the mesial side of an upper molar; you open into that tooth; you are satisfied by the readiness with which it responds to heat and cold and its sensitiveness upon percussion that it is in an abnormal condition; pressure upon the gum around the tooth develops the fact that there is no percimental disturbance. You now begin to excavate, but before you have removed all the leathery decay found in this typical case you have exposed the pulp in the buccal canals and find pus; you make an application in order to give relief; it fails; you make an effort to cap the pulp temporarily; the pain continues, and the same thing is repeated; you make a half-dozen applications, but there is no change for the better. What are you going to do with it?

Dr. Adair.

If the pulp suppurates, it is dead; if a man suppurates, he is dead; isn't he?

Dr. Crawford.

I was instancing a typical case. No sane man would advocate capping a pulp under those conditions.

ITEMS OF INTEREST

Dr. Frank Holland. I would like to ask Dr. Adair to give us a differential explanation of what he calls a live or a dead pulp.

Dr. Adair. A living pulp causes more or less pain from exposure and irritation, but is otherwise in a normal condition.

Dr. Jewett. Mr. Chairman, three years ago this subject was voted out of discussion for the next five years.

Dr. Holland. Mr. Chairman, it strikes me as a very important subject, and I think the discussion should be continued.

Dr. Adair. If Dr. Holland can show me a pulp which I have capped and which has died, I would like him to do so.

Dr. Holland. I can do so, sir; I can show you several.

Dr. Adair. Gentlemen, I do not believe that Dr. Holland would believe a pulp could be saved by capping if one came from the resurrection and told him so. It is like the case of Lazarus. I can demonstrate to him or to any of you that I save pulps by capping them. I have been so successful that I believe it is wrong to kill pulps even after they have ached.

Dr. Colson. Dr. Adair is right, most positively right. Each year I return to the meeting of this Association there is one man I thank, and that is Dr. Adair. I was once an ardent pulp-killer myself, but thanks to him I have given it up. The pulp must be healthy pathologically. There is such a thing as a healthy wound; there is also such a thing as a healthy exposed pulp.

Dr. Holland. Do you cap them after they have ached?

Dr. Colson. Yes, sir; slightly. I do not follow Dr. Adair's method strictly, although I use oil of cloves; but I am successful in treating exposed pulps.

Dr. Crawford. Dr. Holland has made a vigorous onslaught on a very important branch of our profession. I believe he is sincere in doing so. Some years ago I thought as he does tonight, but I demonstrated to myself by careful observation that I was wrong. I imagine, Dr. Holland, if it is a fact that exposed and aching pulps can be saved, you would like to do it, would you not?

Dr. Holland. Yes, indeed!

Dr. Crawford. Follow me closely. Gentlemen, if when you return to the meeting next year, each of you has treated and capped five pulps, and has not saved

three out of the five, I will be surprised. Ours is a painstaking profession. We cannot tell how much a pulp is diseased by a casual examination, but must investigate closely. Carefully remove all the decay from the vicinity of the pulp. If there should be an oozing of blood and a normal amount of sensitiveness, you will know that the pulp is functionally alive. It is desirable to save that pulp, particularly if the patient has not reached the meridian of life. Put the rubber-dam in position, and proceed. Make the cavity thoroughly aseptic. I have used bichloride of mercury, 1-500, though this is a little strong. Now take a drop of pure German beechwood creosote and mix with finely powdered cement, thoroughly incorporating to the consistency of thick cream; take the tiniest quantity of this on the point of an ordinary canal plugger and touch it to the point of exposure, being careful to avoid pressure. Next take a small piece of sterilized cotton, slightly moisten it with beechwood creosote, and place in the cavity. Now take a piece of 24-karat gold, cut in the proper size, concave it and place concaved side next the cotton, to protect the pulp from pressure; fill the cavity with cement, and it is all right.

With this method, Dr. Holland, you can preserve the vitality of the pulps of teeth. I have treated pulps successfully with two points of exposure; and if you will do this and do not save the majority of the pulps you treat you have made some blunder as sure as twice two make four.

I do not want to take up the time of the Association with this apparently hackneyed subject. I do not wish to be understood, however, that I have never capped pulps; I have done so. But if a pulp has been exposed for one hour, and has become congested, it will not do to attempt to cap it. As Dr. Colson says, the exposure must be accompanied with no pathological condition.





Forgotten Lore.

The editor of the *Cosmos*, under the caption "Twice-Told Tales," in the September issue, asks for an explanation of "the continuous repetition of ideas which flows on its unceasing course through our periodical publications," and then assigns as one of the probable causes "the rapid multiplication of dental periodicals," and says "it may be that insufficient editorial care is bestowed upon the selection of material to supply the space demands of their publications." This explanation can only refer to papers offered for original publication, and matter clipped from other periodicals. Society papers and society discussions come within the scope of his second explanation, which is that writers and speakers often relate what they deem to be original, but which sounds strikingly hackneyed to an editor in touch with all the current literature. Undoubtedly, as the editor of the *Cosmos* says, much work of elimination would be saved if writers and speakers would read more and claim less.

But there is another aspect of this subject which will bear consideration. Whilst it may be true that much is repeatedly printed which should be common knowledge, and which should have been learned at college,

there have been also very many good ideas published but once, and then forgotten, which should be digged out of the literature of the past and made to serve the practical purposes of today, not the least of which would be to prevent some of the "discoveries" and "inventions" which will undoubtedly otherwise illuminate the path of progress during the waning century.

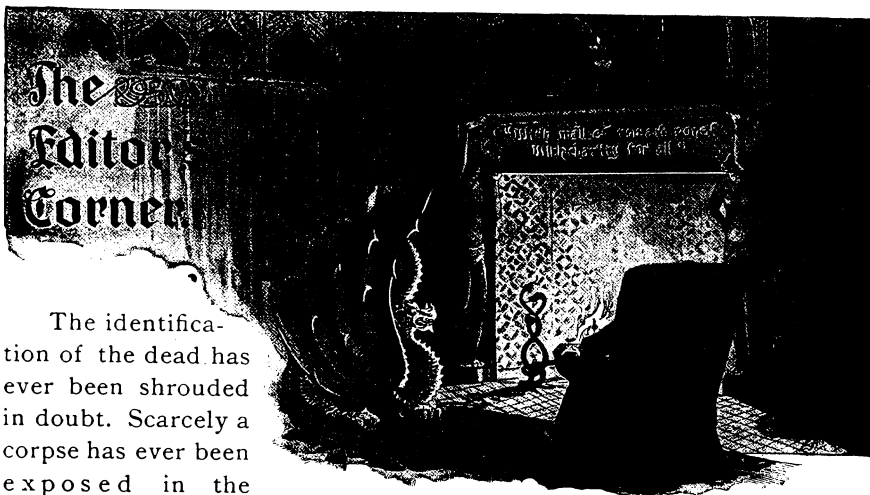
**How to Arrange
an Interesting
Society Meeting.**

As a practical means of accomplishing this purpose the following suggestion is offered to the many persons now engaged in preparing the season's programmes for the society meetings.

It is the common custom with executive committees to seek for essayists among men who are not members of their own societies. While this method has the advantage of importing a teacher from a different section who may bring with him ideas new to the locality, it does not cultivate among the members of the society the habit and the ability of tabulating and reporting their own experiences.

The following method of arranging for at least one meeting would not only bring forth from the dusty tomes of the past much useful knowledge which should no longer be classified as "forgotten lore," but at the same time it would engender perhaps in some the habit of reading, and besides the society would find a ready means of relying on home talent for at least one meeting.

Let the executive committee choose a number of men, five, ten or twenty, in proportion to the size of the society, and notify them that they will be expected to furnish a quota toward the programme for a stated meeting. To each man should be assigned a specified volume, let us say, of the *ITEMS OF INTEREST* or the *Cosmos*, these magazines extending back far enough for our purpose. The duty of each "reader" thus selected will be to scan carefully the pages of the old volume until he finds something new to himself and of probable use to others. This he must transcribe, perhaps adding a few comments based upon his individual experience and forward to the secretary. Upon receipt of these contributions that officer will arrange the parts into an orderly whole, and read this "symposium" at the meeting. Let no one scoff at this plan who has not read through at least one volume from ten or fifteen years ago.



The identification of the dead has ever been shrouded in doubt. Scarcely a corpse has ever been exposed in the morgue of a large city

that has not been "identified" by various persons, all of whom claim with great positiveness to be correct, until confronted with incontrovertible evidence of their error, perhaps in the living bodies of those whom they imagine they recognize in the "remains."

The recent horrible mistake of the poor Middleboro father, who claimed and carried to his home the dismembered body found in Bridgeport, only to meet his daughter alive at the threshold of his home, emphasizes the fact that the police require some more certain proofs of identity than are the present haphazard guesses of those who view the corpses of unknown persons.

**Identifying Dead
Bodies by the
Teeth.**

This Bridgeport case is of interest to us, because at the very outset the authorities declared that identification might be expected from the teeth, and because through careless methods it was a dentist whose evidence was finally permitted to establish a false identification, with the result of untold suffering to the father.

As many may not be familiar with the history of the case, a few brief details may be narrated. A female body was found in a pond near Bridgeport, severed into seven parts. The police at once noted that certain teeth were conspicuously filled with gold, and that two teeth had been recently extracted. The Bridgeport dentists examined the head and declared they did not recognize it or the dental work. One important fact was fairly established by this. The woman was probably not a resident of Bridgeport. A farmer living at Middleboro visited the morgue, and identified the body as that of his missing daughter. To make this certain, the dentist in Middleboro was called to the telephone,

and through that instrument he described from his charts the fillings which he had inserted for the girl. His descriptions were verified by the coroner or one of his aids, *but not by a dentist*, and on this telephone dental verification the body was delivered to the Middleboro man, who took it with him to his home, where he found his daughter alive. Had the Middleboro dentist visited Bridgeport and himself compared the mouth with his chart, and himself examined the mouth and work, he must have been able to declare that the identification was wrong. No two mouths are alike, and no two men's work identical, though two persons may have the same fillings, especially if they are few, as in this instance.

The proper method when seeking to establish the identity of the unknown dead would be to engage a dentist competent to note peculiarities, and to have him prepare for publication in the newspapers a proper description of the mouth and also a chart of the teeth. This the papers throughout the country would willingly publish, and, meeting the eyes of persons seeking missing relatives, it would be easy to visit family dentists and have the newspaper charts compared with the dentist's records.

After the awful catastrophe at Paris last year, when so many prominent persons were burned in the fire at the Charity Bazaar, many bodies were unrecognizable. M. Albert Hans, the Consul from Paraguay, suggested a committee to examine the teeth, and the idea was adopted. The committee included MM. Burt, Branet, Davenport, Ducourmeau, Godon and others. Dr. Davenport personally identified the remains of the Duchess d'Alencon, setting aside a body at first supposed to be hers, because teeth were present which his records showed to have been absent from the mouth of the Duchess, and after examining several bodies he found one in which he recognized his own work. Other bodies were identified by similar means. A full record of these cases will be found in *L'Art Dentaire en Medicine Legale*, a new work by Dr. Oscar Aoedo, of *l'Ecole Odontotechnique*.

	INFORMATION, for Patient and Dentist, a
"Information,"	monthly magazine devoted to Oral Hygiene and
A	General Information regarding noteworthy things
New Magazine.	throughout the world.

We take pleasure in calling attention to this new magazine, which will be issued this month.

The object of the magazine is to instruct patients and the public regarding oral hygiene and dentistry, and to convey useful information to the dentist.

It is designed for the reception-room table, where waiting patients can pick it up and in a few minutes obtain valuable information.

In each issue there will appear articles on some phase of oral hygiene or dentistry, prepared specially for the instruction of patients by men prominent in the dental profession.

A department for boys and girls will contain instructive articles on hygiene, about the teeth, etc., written in a simplified style (perhaps in story form) and designed to be read to children in the school or in the home.

Then, here and there will be a brief suggestion regarding oral hygiene, dentistry, etc., for patients, and an original short story, by some prominent author, will be published in each issue.

The remainder of the magazine will be filled with short articles of interesting and instructive information regarding things in general throughout the world. This miscellaneous arrangement, while leaving the special dental articles the most prominent, will attract the reader's attention and interest him. This will not only be a valuable magazine for patients, but the dentist will find much in it to interest and instruct him.

The special instruction articles for patients will be written by the most prominent men in the dental profession, and it is a duty every dentist owes his patients, to subscribe for this magazine for their benefit as well as his own. Dr. L. P. Bethel, Kent, Ohio, who is well known throughout the profession, is editor and publisher. The subscription price is \$1, but advance subscribers can have the magazine one year for 75 cents, if they remit this amount to him before Oct. 20.

Many communications having been received asking for details of the laws regulating the practice of dentistry in Cuba and Porto Rico, it is evident that some of our young men already contemplate emigration to our new possessions. A letter was sent to the Secretary of State asking for the information sought, and the following reply has been received from the Bureau of American Republics, at Washington:

"Your letter to the Secretary of State asking for information in regard to the laws regulating the practice of dentistry in Cuba and Porto Rico, has been referred to this Bureau.

"The practice of dentistry in Cuba and Porto Rico is regulated by a royal decree of 1880. The studies to obtain the diploma are taken in colleges or private academies, and, although a college of dentistry was created by a Government decree in 1881, it has no official character. It is not necessary to follow the regular courses, as freedom of study is recognized in the islands; but to pass examinations in each of the branches comprised in the curriculum.

"Examinations take place before a board of examiners, composed of professors in medicine and dentists. American dentists wishing to practice their profession in the islands will have to undergo such examinations, paying previously the regular matriculation and examination fees. Information as to the number of branches in which examination is required, and the cost of matriculation and examination fees, may be obtained by applying to the "Decario" (Dean) of the faculty of Medicine of the University of Habana. Very respectfully,

"FREDERIC EMORY, Director."

**Combination Fillings
of
Gold and Cement.**

In Dr. Clapp's reply to Dr. Wedelstaedt, published in this issue, the writer speaks of a tooth in which he inserted a partly completed filling, employing the method advocated in his chapter in the American Text-Book of Operative Dentistry. This tooth was sent to me, and at the request of Dr. Clapp has been forwarded to Dr. Wedelstaedt for examination and criticism. As Dr. Clapp asks my opinion in this matter, I must report that in the tooth sent his margins are quite free of cement. Furthermore, it seems to me that there is no reason to apprehend trouble of this character if the dentist is careful not to use an excessive quantity of cement. The method is good if properly applied.

**Donations
to the
Museum.**

All the donations to the Army Medical Museum which have been acknowledged through our pages have been forwarded to the Museum, and the following letter of acknowledgment has been received:

"I have the pleasure of acknowledging the receipt of a box containing a series of dental anomalies and appliances, which you had the kindness to present to this Museum.

"The Surgeon-General desires me to thank you for this interesting addition to the dental series in the Army Medical Museum collection.

"Very respectfully,

J. C. MERRILL,

"Major and Surgeon, U. S. A."





Oral Pathology and Practice.

A Text-Book for the Use of Students in Dental Colleges and a Hand-Book for Dental Practitioners.

By W. C. BARRETT, M.D., D.D.S., M.D.S., Professor of Oral Pathology in the University of Buffalo, etc.

Publishers: S. S. WHITE DENTAL MFG. CO., Philadelphia, Pa.

In these days when works on dentistry, which their publishers style "text books," contain a thousand pages or more, and are made up of chapters written by different men, it is a real pleasure to review a work of less than two hundred and fifty pages, written entirely by one man, and dealing with one subject, with which it is fair to presume he is sufficiently familiar to teach with the authority of personal investigation and experience.

Such is the volume offered to the profession by Dr. Barrett and which he tells us he has condensed so as to keep it within the limits of a manual. The author himself lectures on the subjects covered by his book, and in the past has felt the need of a proper text-book to which he could refer his classes. This need has undoubtedly been noted by other teachers and it will be a source of gratification to professors and students alike to find for the future a text-book which so admirably supplies the want. The typography is good, a feature being the conspicuous black face type in which matter is printed, which the student should permanently commit to memory, as a dependence in his future practice.

If all in a work seemed in agreement with the opinions of a reviewer, his task would be simple. He would but write "admirable, excellent, creditable," or some other adjective, and the critique would be complete. In this instance if attention is called to two or three passages

which seem open to discussion, it may be understood that one or all of the above adjectives are thought to be applicable to the balance of the book and to the volume as a whole.

On page 77 the author writes as follows: "That an hereditary tendency may be a factor in the etiology of dental caries, no one will for a moment dispute. One may inherit a diathesis, a congenital atonicity or a lack of resistant power, but a bacillus is not received as a patrimony. Modern investigation proves that so many of our disorders are of infectious origin that the doctrine of heredity must be materially modified. Prof. G. V. Black, by his experiments, has demonstrated that there is less of difference in the structure of so-called good teeth, and bad teeth than has been usually imagined."

In view of the balance of the paragraph would it not have been a stronger statement if the first sentence had been omitted? In the light of our present knowledge of the origin of diseases in general heredity plays a decreasing part, and little, if any, in connection with caries.

On page 88 we are informed that: "The text-books and preparations which represent the arteries and veins of the tooth pulp as passing out at a single foramenal opening and traversing the tissues until they anastomose with some larger vessel of which they are branches, and which is not in relation to the tooth at all, are misrepresentations of the actual condition. No blood vessel or nerve can be directly traced beyond the investing pericemental membrane."

This is a view which Dr. Barrett has long been known to hold, and which others have been led to believe because of his assertions which have been accepted as authoritative. But it would seem that this view must now be modified if not abandoned. Dr. Leon Williams has traced blood vessels from the pulp beyond the investing pericemental membrane, and Dr. Cryer's wonderfully prepared sections of upper and lower maxillæ have clearly demonstrated that the substance of the alveolar processes instead of being merely cancellous bone, is really cribriform, containing numerous minute tubular canals which lead from the channels of larger vessels directly to the foramina of the teeth. In some fortuitous sections the dried nerves are seen *in situ*.

In connection with the subject of implantation the author says, "There are no arteries to be avoided, or nerves to injure, if common prudence is employed." Such a statement might be sufficient in a magazine article addressed to practitioners, because "common prudence" renders surgery safe in all parts of the body. In a text-book perhaps it would have been wiser to warn students specifically of the dangers. An exceedingly serious result once obtained in connection with an implantation performed at a public clinic, when an artery traversing the floor of the

antrum was ruptured by the trephine. Three days later after suffering great pain from the distension of the sinus, the patient removed the tooth, upon which profuse hemorrhage ensued which was not controlled finally for many hours. In another instance in implanting an upper central incisor the superior palatine artery was wounded, with the result of effusion of blood into the adjacent soft tissues, the lip swelling to an extent that greatly alarmed the family of the patient. To attempt implantation in the bicuspid and molar region of the lower jaw would be hazardous in the extreme, especially after any considerable absorption of the process. Indeed it would not have been unwise for the author to warn students against attempting this operation in the presence of anæmia.

Perhaps the most astounding statement in the volume is the advancement of the theory that implanted teeth are retained because of the formation of a new pericementum. Dr. Barrett gives some reasons for adopting this theory, but at best it is an hypothesis, unproven by clinical demonstration, and consequently questionable teaching.

The work is written in Dr. Barrett's best style, and throughout there is abundant evidence that the writer is confident of the correctness of his expressed views. This will give the volume its chief value as a text-book, which should always be dogmatic and authoritative.

The letterpress and binding is in the usual good style of the publishers.

R. O.

Conservirenden Zahnheilkunde. (Operative Dentistry).

By PROF. W. D. MILLER, Berlin, Germany.

Second Revised and Enlarged Edition. With 449 Illustrations.

Publisher : GEORG THIEME, Leipzig, Germany, 1898.

This second edition covers 40 more pages, has 29 more drawings than the first and, as the author tells us in the preface:

"He has endeavored to regard everything new and valuable that has presented itself during the last two years to the dental profession."

He also tells us in this preface that our specialty has undergone development and made such progress as has hardly been equalled in any other specialty of medicine.

The arrangement of the work is practically the same as that of the first edition, which I gave in detail in my review, published in the "*Dental Practitioner and Advertiser*" of 1896. Copper amalgam receives the same amount of eulogy, which is evidence that the European dentists have a better material at command, a fact equally true of the porcelain inlays of Dr. Jenkins, which I had occasion to examine personally when in Dresden last summer and found superior to anything I ever saw in that line. In the chapter on Amalgam the author still gives prominence to the spheroidal tendency of amalgam, though the more recent and exhaustive researches of Black are properly referred to. Cataphoresis receives a compact and comprehensive treatment together with a warning as to its conservative application only. De Trey's gold receives the enthusiastic endorsement of numerous German operators. The author claims for it the great advantage of starting difficult cavities and such where retaining grooves were not easily possible—in the opinion of the reviewer the normal use to which this fold will be relegated when the usual enthusiasm of its novelty has expired. Erosion, one of the conditions which is still awaiting the dictum of a Miller as to its etiology, is treated with the same brevity as in the first edition—speaking of its operative treatment only. The chapters on fillings proper have undergone advantageous changes by additional drawings. In the chapter on secondary dentine and pulp nodules we are informed that Albrecht & Schäffer have successfully used the Roentgen rays for diagnostic purposes. The use of formalin, iodoformagen, formigenol, pulp-in and antiseptin receives proper mention, ending thus: "It is much to be regretted that the manner in which new remedies are recommended to, and among the dental profession corresponds much more with the advertisement of a commercial business than with the character of a scientific calling." "Fully as much must we regret that periodicals publish results of new remedies without proper experimentation. Publications of this sort are of no advantage whatever; they simply serve to cause confusion and interfere with the quiet development of our profession."

A timely warning indeed! Regarding pyorrhœa alveolaris the author expresses his known view: (1) Predisposing causes. (2) Local irritation. (3) Bacteria. Amputation of roots in cases of chronic alveolar abscess receives proper mention, and the chapter on the treatment of deciduous teeth is somewhat enlarged. The whole work has been thoroughly brought up to date by considering all improvements made during the last two years. The reception which the book received from the German dental profession and its journals was equal to that of his "*Micro-organisms of the Mouth*," which is well proven by the fact that a second edition is demanded after such short a time. My personal opinion of this

work remains the same as expressed in my review of the first edition "*Dental Practitioner and Advertiser*," and I can only close these lines by repeating my regret that the book has not been translated into our language and thus made accessible to our English speaking dentists.

R. H. HOFHEINZ, D.D.S.

CORRESPONDENCE

Balsamo del Deserto.

To the Editor.

Replying to "S. Davis, of Denver, Colo.," in September number of your journal, I wish to say that "Balsamo del Deserto" is just what its name implies, balsam of the desert and from one of the varieties of pine or fir trees of that locality. It is no secret preparation, as it contains only five per cent. of cinnamon oil. This is added to the crude balsam to give it the right constituency, as it would otherwise be somewhat unmanageable, and secondly to confer upon the preparation decided antiseptic properties.

This preparation being free from all secret formulæ and thoroughly scientific, can be used by all with success. Respectfully,

WILLIAM L. ROBERTS, D.D.S.

Springfield, Mass.





Dr. Gardner Quincy Colton.

Dr Gardner Quincy Colton, through whose instrumentality "nitrous oxide gas" was first used in dentistry, died August 9, 1898, in Rotterdam, Holland. He had been on a visit to Europe and was about to return home when he succumbed to a complication of diseases brought on by old age.

Dr. Colton was born in Georgia, Vt., February 7, 1814, and was the twelfth child of his parents. He first learned chair-making, and when twenty-one years old came to New York, where he followed his trade, studying all the time, however, in the hope of becoming a physician. In 1842 he entered the College of Physicians and Surgeons and later studied in the office of the late Dr. Willard Parker.

Two years after he began to deliver lectures on physiology and chemical phenomena. He had acquired a knowledge of electricity, a science then in its infancy, and invented an electrical motor, which he exhibited, illustrating his lectures with it. This motor is now in the Smithsonian Institute in Washington.

Dr. Colton went to California in 1849, where he searched for gold and practiced medicine among the miners. He was the first man in California to be appointed a Justice of the Peace. With a competence, he returned to the East and went about the country lecturing, telling his audiences of the anæsthetic properties of the laughing gas. In 1863 he established an office in the Cooper Institute. A few years later he was able to visit Paris with a record of 20,000 administrations. Returning to America, he opened offices in Philadelphia, Boston, Baltimore and several other cities, and thus, through his energy and success, the use of nitrous oxide as an anæsthetic became thoroughly established, and dentists throughout the length and breadth of the land began to use it, and it dates from the rediscovery in 1863.

Away back in 1844, when he was lecturing in Hartford, Conn., and showing the effects of nitrous oxide gas on persons to whom he administered it on the stage, Dr. Horace Wells, who became one of his subjects, was impressed with the possibility of using the gas in dentistry. He

told Dr. Colton of his idea, and the next day he had the gas administered to him and a tooth extracted.

Dr. Colton was also an author and a Shakespearean scholar. He published a brochure on "Shakespeare and the Bible," and wrote a good deal upon the discovery of anæsthesia. C. S. McNEILLE.

Resolution Taken by the American Dental Society of Europe on the Death of Dr. de Trey.

Whereas, we have, during the session in London of the American Dental Society of Europe, heard of the sudden and unexpected death of Dr. de Trey, of Lausanne, Switzerland, and

Whereas, Dr. de Trey was one of the founders of the A. D. S. E. and has always been held in great honor and respect, not only by the members of this society, but by the dental profession at large, for his estimable private and professional qualities,

Resolved, That the American Dental Society of Europe herewith extends its sympathy and condolence to the bereaved family. It recognizes that his life, having been devoted to his profession, his death has been a severe loss to the profession and particularly to this and other societies of which he was a member, and

Resolved, That copies of this resolution be forwarded to the family of our lamented friend and confrere and to the European and American dental journals.

(Signed.)

L. C. BRYAN,
WILLIAM PATTEN,
G. W. FIELD.

WILLIAM A. SPRING, Secretary.

Dresden, Germany.





List of Committees for the Joint Meeting of the Southern Branch of the National Dental Association and the Louisiana State Dental Society.

No. 1, Committee on Arrangements, in subdivisions:

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C. L. ALEXANDER,

Corresponding Secretary Southern Branch National Dental Assn.
Charlotte, N. C., July 12, 1898.

Minnesota State Dental Association.

The fifteenth annual meeting of the Minnesota State Dental Association was held in St. Paul, beginning September 6, 1898. The following officers were elected for the ensuing year: President, Dr. L. P. Leonard, Waseca; vice-president, Dr. G. S. Munson, St. Paul; secretary, Dr. H. L. Cruttenden, Northfield; treasurer, Dr. H. M. Reid, Minneapolis; chairman executive committee, Dr. C. H. Goodrich, St. Paul; master of clinics, Dr. W. N. Murray, Minneapolis. The next annual meeting will be held at Northfield, subject to the call of the executive committee, which probably will be some time in August.

H. L. CRUTTENDEN, Secretary, Northfield.

Southern California Dental Association.

The first annual meeting of the Southern California Dental Association was held in San Diego, Cal., Sept. 2 and 3, during which the following programme was presented:

Meeting called to order at 2.30 p. m. President Dr. W. A. Smith, of Los Angeles, in the chair.

Address of Welcome.....Dr. Emma T. Read, San Diego

President's Address.....Dr. W. A. Smith, Los Angeles

How I Fill Root Canals with Bibulous Paper Points,

Dr. E. W. Sheriff, San Diego

Periodental Inflammation.....Dr. Edgar Palmer, Los Angeles

Evening Session, 7.30 P. M.

The Relation of Dentistry to Medicine,

P. C. Remondino, M. D., San Diego

Dental Education.....Dr. H. R. Harbison, San Diego

Dental Education.....Dr. E. L. Townsend, Los Angeles

Saturday Morning, Sept. 3, 9 P. M.

Clinics:

Quick Mode of Gold and Silver Plating for Regulating Appliances,

Dr. H. R. Harbison, San Diego

Preparing Cast with Aluminum as a Lining for Rubber Plates,

Dr. J. A. Cronkhite, Los Angeles

Anchorage in Orthodontia.....Dr. D. R. Wilder, Los Angeles

(This was a talk, the Doctor using a blackboard to illustrate his method.)

Business:

Dr. George H. Cushing was elected to honorary membership.

This being the first annual meeting of this association, over fifty members of the profession signed the roll of membership. It was the largest meeting ever held in Southern California, and the association starts out with a very bright future before it.

All of the old officers were re-elected for the ensuing year: President, W. A. Smith, D. D. S., Los Angeles; first vice-president, H. R. Harbison, D.D.S., San Diego; second vice-president, Dr. C. W. Sylvester, Riverside; treasurer, Dr. J. M. White, Los Angeles; secretary, L. E. Ford, D. D. S., Los Angeles.

Meeting adjourned to meet the first Tuesday in October, 1899, at Los Angeles.